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ANNUAL REPORT
OF THE
CITY ENGINEER

TORONTO
1911

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ANNUAL REPORT

OF THE

CITY ENGINEER

OF TORONTO FOR 1911

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TORONTO
The Caswell Co., Limited, City Printers, Cor. Adelaide and Duncan Sts.
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TORONTO.

TOPOGRAPHY.—The City of Toronto is situated upon the northern shore of Lake Ontario, about forty miles easterly of its western terminus. It lies in latitude 43° 39′ 10″ north, longitude 79° 23′ west, on a plateau gently ascending north for a distance of $3\frac{4}{5}$ miles, where an altitude of about 220 feet above the lake level is reached. It extends about ten miles from east to west limits, and is generally level, with slight depressions at points where minor water courses previously existed. The harbor is formed in front of the City by a sandy island, which lies to the south, at a distance of about a mile and a half. Docks extend about two miles along harbor front.

Toronto is the capital of the Province of Ontario, and in it are situated the Provincial Parliament Buildings and Government House, the residence of the Lieutenant-Governor of the Province.

STATISTICS.

AREA.—The area within the City limits, not including the portions of the City land covered by water, is 28 square miles.

POPULATION.—The population of the City is about 425,000.

PUBLIC STREETS AND LANES.—Within the City limits there are 412.72 miles of streets and 120 miles of lanes, of which 288.59 miles of streets are paved, and 129.80 miles unpaved

SEWERAGE.—The City is drained by what is known as the combined system of sewers, and there are 335.717 miles of sewers.

An extensive trunk sewerage system is now in course of construction, the total approximate cost of which will be $2,400,000.

WATER WORKS.—The Water Works system is owned and operated by the City, the supply being obtained from Lake Ontario through a 6-ft. steel conduit laid across Toronto Island to the south tunnel shaft near Hanlan's Point, and from thence through a tunnel 8 ft. 4 in. in diam., laid under Toronto Bay to the Main Pumping Station on the water front, the water being pumped through the City mains, the surplus going to the Reservoir situated north of the north City limits. Cost of system to date, about $10,000,000.

A large and modern slow Sand Filtration Plant is now under construction at Toronto Island, which will cost approximately $790,000.

STATIONS AND ENGINES.—

Main Pumping Station.

No. 4 Engine, 10,000,000 gals. capacity, 24 hours.
" 5 " 10,000,000 " " "
" 6 " 15,000,000 " " "
" 7 " 15,000,000 " " "

4 electrically-driven turbine pumps, 13,500,000 gals. capacity per 24 hours.

High Level Pumping Station.

2—6 million gallons each per 24 hours (steam).
2—3 " " " "

Electrically driven turbine pumps for domestic use—
2—10 million gallons each per 24 hours.
2—6½ " " "

Electrically-driven turbine pumps for fire purposes—
2—10 million gallons each per 24 hours.
2—6½ " " "

Island Pumping Station.

Domestic—
2—1½ million gallons each per 24 hours (elec. turbine).
1—1 " " " (steam).
1—½ " " " "

Fire—
2—1½ million gallons each per 24 hours (elec. turbine).

433.835 miles of water mains, including annexed districts.
84,229 water services.
4,965 street hydrants.
4,066 valves.
3,337 meters in use.

WATER RATES.—Average schedule, per tariff, 4⅓ cents per 1,000 gallons, and by meter, 10 cents per 1,000 gallons for the first 1,000,000 gallons supplied by any meter in any year, and 7½ cents per 1,000 gallons for all over that amount supplied by the same meter in the same year, except that no meter rate shall be less than $1.25 net per quarter year.

80,000 water takers.
Pressure—Domestic and fire, 50 to 90 lbs.
Average quantity pumped in 24 hours, 41,022,304 gallons.
Water consumed annually, 14,973,240,863 gallons.
Fuel used—soft coal screenings.

General receipts	$ 3,798 04
Revenue collected in 1911	712,632 84
Charges made against different branches of City service for water used	106,206 35
Total	$ 822,637 23

Operating expenses, including cost of collecting rates and debt charges	$ 778,592 47

FIRE PROTECTION.—

296 officers and men in brigade.
107 horses.
79 pieces of apparatus for various purposes.
4,595 fire hydrants.
25 fire stations.
10 steam fire engines.

Police Protection.—

531 officers and men.
1 squad of 14 mounted men, 1 sergeant and 2 patrol sergeants.
4 patrol wagons.
1 prison van.
1 headquarters and 10 stations.
137 patrol signal boxes.

Military.—There are two regular corps stationed in the City (one mounted and one infantry), at Stanley Barracks, near the site of old Fort Rouille, and seven militia corps (two mounted and five infantry), all of which have first-class bands and the use of well-equipped and commodious Armouries.

Lighting.—The Municipal Toronto Hydro-Electric System, which is under a commission, light all City streets. Domestic and business light and power are supplied by Toronto Hydro-Electric System, Toronto Electric Light Co., and the Consumers' Gas Co.

Telephone and Telegraph Service.—The Bell Telephone Company is the only company doing business in the City. They have 35,300 telephones in use, 37,500 miles of overhead, 67,000 miles of underground wires, 45 miles of underground conduit, and 335 miles of ducts.

There are two telegraph companies doing business in the City, the Great North-Western Telegraph Company, with 90 sets of instruments and 280 miles of overhead wires; and the Canadian Pacific Railway Telegraph Company.

Public Parks.—The Public Parks of the City are under the control of the City Council. There are 40 public parks, having a total area of about 1,640¼ acres.

Education.—The educational system is under the direction of the Board of Education and the Separate School Board. There are 74 public schools, having a total of 830 rooms, with a staff of 920 principals and teachers, and 171 Kindergarten teachers. Registered pupils in Public Schools, 56,471. Four collegiate institutes, 3 high

schools, 1 technical high school, and 1 high school of commerce and finance, having a total of 94 class rooms, with a staff of 120 principals and teachers.

Eighteen separate schools, with a staff of 99 principals and teachers.

2 Industrial Schools (Protestant).
1 Industrial School (R. C.)
40 Colleges, Seminaries and Pay Schools.
1 Technical School—Number of rooms, 24; Number of Teachers, 51.
1 High School of Commerce and Finance—Number of rooms, 7; Number of Teachers, 7.
5 Universities.
3 Cathedrals of all denominations.
238 Churches of all denominations.
9 Synagogues and several Jewish Churches.
48 Missions.
5 Mission Training Schools.
9 Convents.

Public Libraries.—There is a Reference Library of 87,500 volumes in the finest library building in Canada, erected through the generosity of Mr. Andrew Carnegie; a main Circulating Public Library, and 7 Branch Circulating Libraries, all under the control of the Public Library Board. In these Circulating Libraries there are about 90,000 volumes, and the yearly circulation is about 600,000 volumes.

Public Institutions.—

62 Hospitals, Asylums and Public Homes.
1 Free Public Art Gallery and Museum.
1 Free Public Bath House, erected at a cost of $45,000.
4 Free Bathing Stations.
3 Institutions for destitute and criminal classes.

Law.—Toronto is the centre of the Law System of the Province of Ontario, having 27 Law Courts within its limits.

AMUSEMENTS.—

8 Theatres.
62 Music, Concert Halls and Vaudeville Houses.
Zoological Gardens.
238 Public Buildings, Halls, etc.

PUBLIC ACCOMMODATION.—

196 Hotels.
3,700 Boarding Houses.

RAILWAYS.—There are three steam railroads making Toronto a divisional point, namely, the Grand Trunk Railway, Canadian Pacific Railway and Canadian Northern Ontario Railway. The mileage of each within the City limits is respectively as follows:—90, 36, 10 miles.

121 Passenger trains enter and leave the City daily.

200 Freight trains enter and leave the City daily.

In addition four Electrical Lines enter the City:—The Toronto and York Radials, three in number, and the Toronto Suburban Railway.

The Toronto and York Radials serve on the East the district from corner of Queen and Kingston Roads to Scarboro. On the North from intersection of C.P.R., North line through City at Yonge Street and North to Jackson's Point on Lake Simcoe, via Yonge Street. On the West from Sunnyside to Port Credit via Lake Shore Road. Total mileage 72.43 as single track. Number of paying passengers carried during year, 3,595,892.

The Toronto Suburban serves the district from North-west of Toronto, extending from corner of Keele and Dundas Streets to Lambton on the West and Weston in North-westerly direction, also Davenport Road line in suburbs of City. Mileage operated 9.84 miles. Number of paying passengers during year 891,203.

The Toronto Railway Company has the exclusive franchise for operating a street railway system within the City limits. They have 107.24 miles of tracks on the streets and 7.42 miles in the sheds, etc.; about 663 motors and 169 trailers in operation, and carried during 1910 a total of 136,259,587 passengers, of which 98,117,991 were paid passengers, and 38,151,596 were transfers.

SHIPPING.—Owing to the favorable situation of Toronto on the shores of Lake Ontario and Toronto Bay, an extensive trade is carried on by various shipping companies and vessel owners in freight and passengers.

BUSINESS.—

6 daily newspapers; 49 weekly; 20 semi-monthly; 76 monthly and 8 quarterly newspapers and periodicals; 1 directory company.
5 Public markets.
36 Banks, not including branches.
1,950 Factories and manufactories.
496 Wholesale houses.
10 Departmental stores.
8,400 Miscellaneous business companies, corporations and stores.

SANITATION.—

Street Cleaning, Watering and Scavenging.—A modern and complete system of street cleaning, watering and scavenging is owned and operated by the city.

The supervision of the sanitary requirements of the City is under the control of the Local Board of Health.

The harbor and all water front property is under the control of a Harbor Commission.

INDUSTRIAL EXHIBITION.—

The largest permanent exhibition in the British Empire, open for two weeks about the first of September. Attendance this year 926,000.

Past City Engineers of Toronto.—

1840-1842, Thomas Young.
1843-1852, John G. Howard.
1853, William Thomas.
1854, John G. Howard.
1855, William Kingsford.
1856, Thomas H. Harrison.
1857-1858, Thomas Booth.
1859-1860, Alfred Brunel.
1861-1870, J. H. Bennett.
1871-Oct., 1875, Chas. W. Johnston.
Oct. 1875-July, 1880, Frank Shanly.
Sept. 1880-July, 1883, R. J. Brough.
Oct. 1883-1889, Charles Sproatt.
1890-Sept., 1891, W. T. Jennings.
Sept. 1891-May, 1892, Granville C. Cunningham.
May, 1892-Jan., 1898, E. H. Keating.

ANNUAL REPORT

OF THE

CITY ENGINEER

OF THE

CITY OF TORONTO

FOR THE YEAR 1911.

CITY ENGINEER'S OFFICE,
Toronto, December 31st, 1911.

To His Worship the Mayor and Members of the Council of the Corporation of the City of Toronto:

GENTLEMEN,—In compliance with By-law No. 2534, I have the honor to lay before you the Annual Report of the Department for the year ending 31st December, 1911, setting forth the various works carried out during the year with details of cost of construction, and suggestions and recommendations as to new works and improvements required.

OFFICIAL STAFF.

City Engineer	Chas. H. Rust, M. Can. Soc. C.E., M. Am. Soc. C.E.
Deputy City Engineer	C. L. Fellowes, M.Can.Soc.C.E.
Principal Assistant Engineer	G. G. Powell, A.M.Can.Soc.C.E.
Asst. Engineer in charge of Sewers	J. D. Shields, M. Can. Soc.C.E.
Asst. Engineer in charge of Roadways	M. A. Stewart.
Asst. Engineer in charge of Bridges, Railways and Docks	E. L. Cousins,A.M.Can.Soc.C.E.
Asst. Engineer in charge of Main Drainage Works until July, 1911	A. C. D. Blanchard, A.M. Can. Soc. C.E., A. M. Am. Soc. C.E.
Asst. Engineer in charge of Main Drainage Works after resignation of Mr. Blanchard	A. G. Garrow, A.M. Can. Soc. C.E.
Accountant	Wm. McCartney.

Secretary, Committee on Works	A. H. Clarke.
Chief Clerk	G. J. Castle.
Secretary, City Engineer	Miss L. E. Graydon.
Chief Engineer, Main Pumping Station	Alex. McRae.
Chief Engineer, High Level Pumping Station	Thos. Walsh.
Resident Engineer, Filtration Plant, Island	F. F. Longley, A.M. Am. Soc. C.E.
Supt. of Maintenance and Distribution	W. H. Randall.

FINANCIAL.

The expenditure for the year just closed has exceeded any previous year, and will give your Council some idea of the great progress the City is making.

The total expenditure of the Department, including Water Works, amounted to $5,464,755.55.

Water Works	$1,573,617 36
General and special work	1,985,044 69
Street railway track allowance pavement	362,678 12
Local improvements	1,531,166 03
Island works	12,249 35
Total	$5,464,755 55

Expenditure upon local improvements was divided as follows:

Roadways	$808,369 64
Sidewalks	315,417 36
Curbs	23,501 25
Sewers	260,411 21
Street openings, extensions, etc.	123,466 57
Total	$1,531,166 03

STAFF.

Mr. A. C. D. Blanchard, Resident Engineer in charge of Main Drainage Works, resigned to accept the position of City Engineer of Lethbridge, and Mr. A. Garrow, who was an assistant on Mr. Blanchard's staff, was appointed to the position. When it was decided to arrange with the Hydro-Electric Commission to purchase a certain amount of power by the City for the purpose of lighting the streets and supplying electricity to the citizens, the inauguration of this work was placed under the control of the City Engineer. Afterwards the work became of such magnitude that it was deemed advisable to place same under a Commission, and it was transferred to that body in June.

EXPENDITURE.

The great progress made in the growth of the City, and with the addition of new territories and the consequent demand for municipal improvements, resulted in making the expenditure during the past year the heaviest in the history of the Department. This expenditure, of course, necessitated very careful engineering both in preparing plans and in carrying out the improvements, and the responsibility thrown upon the staff was very great, but I am pleased to say that they worked energetically and their hours were frequently a long way in excess of the official hours prescribed by the By-law.

SPECIAL MATTERS FOR THE ATTENTION OF THE COUNCIL.

The following are some question which I desire specially to bring to the attention of your Council:

There have been some statements made during the past year that the inspection on certain works was not quite up to standard. The large number of improvements being carried out calls for a great many inspectors, and these men are only employed during the summer season. It is, therefore, at times almost impossible to get men properly qualified, and inspectors are frequently engaged who have not had the experience to enable them to properly supervise the work. This, of course, necessitates a great deal more care and attention on the part of the Assistant Engineers. We have, during the past year, put on a number of engineering graduates from the School of Science, and their work has been uniformly satisfactory. Naturally, as they are commencing their profession, they show a great deal of interest and care in carrying out their instructions, and whilst the employment of these men has led to some dissatisfaction on the part of certain men who think they should be engaged as inspectors, I am satisfied that the work of these engineering students is more efficient generally than the employing of men who have had no experience in public works.

Some members of the Council during the year have made statements reflecting on the Department which would not have been made if the members in question had taken the opportunity to have first discussed these matters with the City Engineer.

STREET RAILWAY MATTERS.

During this year, carrying out the Order of the Ontario Board, the Toronto Railway Company commenced the construction of street railway tracks on Bay, Adelaide, St. Patrick, Wilton Avenue and Harbord Street.

Harbord and Adelaide Street lines were open for traffic before the close of the year.

During the coming season we hope to have the balance of these lines in operation. This will give much needed relief, but even with these extensions there is still very much congestion during the rush hours, and the Company should be ordered to put on a larger number of additional cars.

The new civic car lines have been commenced on Gerrard Street and St. Clair Avenue, and they should be completed during the coming summer, but unfortunately no arrangement has been arrived at as yet as to the method of operation.

RAPID TRANSIT.

During the year the Department prepared plans and made a very complete report of the cost of constructing a subway under Bay, Teraulay and Yonge Streets, as far north as St. Clair Avenue. The matter was presented to the ratepayers for approval of the expenditure, but the question was voted down.

OVERHEAD WIRES.

I must again call the attention of your Council to the absolute necessity of taking some steps to remedy the present condition of affairs. A city of the size and importance of Toronto should certainly be able to get rid of, at least in the business districts, the large number of overhead wires and unsightly poles. These are not only a disfigurement to the streets, but a danger to the Fire Department. Whilst, of course, legislation is necessary, owing to the companies acting under a Dominion franchise, it should not be very difficult to get the companies together and have conduits constructed by the City which should be common to all companies upon payment of a fixed rental per foot of duct.

REPORT OF PRINCIPAL ASSISTANT ENGINEER.

After the appointment of Mr. Powell as Principal Assistant, I instructed the Assistant Engineers in charge of Sewers, Roadways, Main Drainage and Bridges and Special Work to report direct to Mr. Powell, and I attach his report, and also the reports of the assistants in charge of the various Departments hereto.

MAIN DRAINAGE WORKS.

Work has progressed very satisfactorily, and the low level interceptor sewer should be completed by the autumn of 1912.

The Sewage Disposal Works are about finished. The out-fall sewer has all been laid with the exception of expansion joints.

Work on the substructure of the Pumping Station was carried out by the Department by day labor. The plans for the superstructure were, however, prepared by the City Architect, and work is progressing very satisfactorily.

RAILWAYS AND BRIDGES.

This branch of the Department deals with construction, repairs and maintenance of bridges, docks and all steam and street railway matters and other special work, and the Engineer's report gives full details of the operations thereof.

TEMPERATURE AND RAINFALL.

Through the courtesy of Mr. R. F. Stupart, Director of the Meteorological Department, a table is attached showing the temperature and rainfall during the year:

STATEMENT OF TEMPERATURE AND PRECIPITATION AT TORONTO, 1911.

Month.	Temperature.			Precipitation.		
	Mean.	Max.	Min.	Rain.	Snow.	Total.
	°	°	°	in.	in.	in.
January	25.9	44.1	1.7	1.20	8.8	2.08
February	25.5	47.7	4.7	0.19	19.3	2.12
March	30.1	55.2	1.3	1.3€	6.8	2.04
April	43.3	76.0	16.3	1.44	1.3	1.57
May	61.3	90.8	28.5	1.97	0.2	1.99
June	65.6	91.6	47.2	1.52	.....	1.52
July	71.6	103.2	47.7	2.61	.....	2.61
August	69.2	89.8	47.2	2.42	.....	2.42
September	60.5	87.3	34.3	2.57	.....	2.57
October	49.5	74.6	27.4	3.45	1.2	3.57
November	35.9	62.3	17.6	3.16	6.7	3.83
December	33.9	54.6	9.2	2.02	8.3	2.85
Year	47.7	103.2	1.7	23.91	52.6	29.17

Note.—Ten inches of snow equals one inch of rain.

WATER WORKS.

FINANCIAL.

The total expenditure upon Water Works improvements during the year was $1,573,717.36, divided as follows:

Maintenance	$307,274 30
Construction	106,768 39
Renewals	8,377 10
Special services	1,035,676 44
Revenue mains	115,621 13
	$1,573,717 36

During the year the work in this branch of the Department has been very heavy. Full details of same are set forth in the report of the Deputy City Engineer.

RECORD OF RAINFALL AT RESERVOIR GROUNDS FOR THE YEAR 1911.

Day.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	in.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
1st					0.83					0.30			
2nd	0.11							0.19	0.87				
3rd										0.06			
4th													
5th				0.51		0.28	0 01						
6th						0.17			0.15				
7th				0.03		0.11				0.90	0.97		
8th	0.05							0.09				0.20	
9th						0.01						0.15	
10th			0.32			0.11	0.99			0.14	0.28		
11th						0 03	0.40	0.10					
12th	0.38		0.24	0.15		0.35			0.39			0.44	
13th						0.13	0.02				0.38	0.22	
14th				0.32									
15th							0.18	0.05	0.08			0.33	
16th					0.05		0.07					0.17	
17th		0.10			0.25		0.69						
18th					0.09			0.32		1.37	0.85		
19th							0.02						
20th									0.02				
21st	0.03				0.18							0.10	
22nd									0.16	0.09		0.11	
23rd					0.21			0.13					
24th						0.03					0.48		
25th									0.37				
26th		0.02				0.06			0.08				
27th	0.44		0.64			0.02		0.93	0.22	0.13		0.27	
28th								0.38			0.27		
29th							0.04		0.51				
30th				0.17									
31st					0.42							0.09	
	1.01	0.12	1.20	1.18	2.03	1.30	2.42	2.19	2.35	2.99	3.23	2.08	22.10

RECORD OF SNOWFALL AT RESERVOIR GROUNDS FOR THE YEAR 1911.

Day.	Jan.	Feb.	March	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	in.
	in.	in.	in.	in.	in.						in.	in.	
1st.		1½											
2nd.				2							1	¾	
3rd.	¼				¼								
4th.		1¾	¾										
5th.													
6th.	3½												
7th.		9¾											
8th.													
9th.													
10th.													
11th.													
12th.													
13th.													
14th.		1¼											
15th.		3									1½		
16th.				1¾									
17th.			1¾								1		
18th.													
19th.													
20th.													
21st.													
22nd.		½											
23rd.	½												
24th.													
25th.													
26th.											½		
27th.													
28th.			¼									1⅛	
29th.			1¼										
30th.			¾										
31st.										1½		4⅓	
	4¼	17¾	4¾	3¾	¼					1½	4	6 5/24	42 11/24

In concluding this report, I wish to thank the members of the Council, especially those of the Committee on Works, for co-operation and assistance in the carrying on of the work of the Department, and to the staff for their loyal and efficient support.

Respectfully submitted,

C. H. Rust,
City Engineer.

Report of Deputy City Engineer and Assistant Engineer in Charge of Water Works

CITY ENGINEER'S DEPARTMENT,
Toronto, December 30th, 1911.

Mr. C. H. Rust, City Engineer:

DEAR SIR,—I herewith submit the Annual Report of this Department for the year ending December 30th, 1911.

DISTRIBUTION.

178,944¼ feet of mains have been laid during the year, consisting of—

11,142	feet of	16-inch	cast iron main.
33,890	"	12-inch	"
1,167	"	8-inch	"
129,995¼	"	6-inch	"
2,750	"	4-inch	"
178,944¼	feet, equal to 34.080 miles.		

The contractors for the 20-inch main on Davenport Road have laid, approximately, 7,300 feet.

At the end of the year the total length of the mains in use in the City was 433.835 miles.

VALVES.

The number of stop valves placed in position is as follows:

1	—	20-inch stop valve.
9	—	16-inch "
49	—	12-inch "
4	—	8-inch "
234	—	6-inch "
4	—	4-inch "

During the year there were taken out—one 16-inch, six 6-inch and three 4-inch stop valves, making a total of 4,066 stop valves in use.

One 20-inch, three 16-inch, two 12-inch, three 6-inch and two 4-inch check valves were placed in position, making a total of 93 check valves.

HYDRANTS.

Fire hydrants to the number of three hundred and sixty-nine (369) have been placed on the streets during the year, consisting of three hundred and fifteen (315) 3-way hydrants, fifty-four (54) 2-way hydrants, and on private and other property, five (5) 3-way hydrants and two (2) 2-way hydrants.

In addition, thirty-eight (38) 2-way hydrants have been replaced by 3-way hydrants, and seven (7) 3-way hydrants by 2-way hydrants.

Two 3-way hydrants and four 2-way hydrants were removed from off the streets, leaving a total of 4,965 hydrants in use.

HOUSE SERVICES.

The total number of services laid during the year was 7,004, being an increase of 853 over last year, equal to 14 per cent.

LEAKS ON MAINS.

4	on 36-inch	mains.
—	on 30-inch	"
8	on 24-inch	"
7	on 20-inch	"
1	on 16-inch	"
118	on 12-inch	"
—	on 10-inch	"
4	on 8-inch	"
130	on 6-inch	"
7	on 4-inch	"
—	on 3-inch	"
Total.....	279	of all sizes.

The cost of repairing, exclusive of repairs to asphalt pavements, was $3,269.98, including material used, or an average cost of $11.72 per leak.

Average number of leaks per mile of distribution is 0.64, and the average cost per mile, $7.55.

RESERVOIR.

The average depth of water in the Reservoir for the year was 16 feet 5 inches, equal to an elevation of 212 feet 5 inches above zero level of Lake Ontario, and containing 24,037,537 gallons.

The Reservoir was empty for one day, on the 16th of February.

The highest elevation of water was 217 feet 5 inches, on the 31st of July.

TEMPERATURE OF WATER.

The average temperature of the water taken at the City Hall tap was 47.54 degrees Fahrenheit. The highest temperature, 72 degrees Fahrenheit, on August 8th, and the lowest, 35 degrees Fahrenheit, on February 8th.

STABLES.

The cost of this branch for the year, including feed, veterinary surgeon, repairs to wagons, harness and sleighs, was $9,009.84.

METER AND MACHINE SHOP.

The total number of meters in use (approximately)	3,337
Number of meters rebuilt in shop	652
Number of meters inspected and repaired without removal	1,579
Number of meters taken off for repairs and replaced	816
New meter takers	579
Meters ordered off	156
Total value of meters in service (approximately)	$187,491 64
Valves taken off Island in fall, put on in spring	54
Number of drinking taps placed on Island	31
Number of fountains in use	63
Number of combination fountains in use	19
New meter boxes put in	155
New frames used	113

HYDRANT AND VALVE DEPARTMENT.

Number of inspections made of hydrants on street	39,814
Hydrants pumped, packed and oiled	755
Packed and oiled	46
Frozen, blown out, fired or thawed out, P. P. and oiled	621
New valves put on	218
New caps put on	23
New joint rings	211
New chain rings	239
New packing rings	1
Nozzles caulked	385
Chain rings closed	878
New cap leathers	311

Repaired caps put on		12
Crowns chipped		5
Jackets driven		262
Set in line		119
Tightened with bar and chain		15
Hydrants repaired on streets		355
Number of inspections made of H. P. hydrants on street		570
H. P. hydrants filed on street and put in order		149
H. P. hydrants syphoned out, pumped, packed and oiled		2
Valves repaired on street		106
2-inch	1	
3-inch	8	
4-inch	12	
6-inch	63	
12-inch (check)	1	
12-inch	19	
16-inch	1	
24-inch	1	
Valves examined, shut and opened on street		1,121
3-inch	1	
4-inch	31	
6-inch	941	
10-inch	6	
12-inch	132	
12-inch (check)	1	
16-inch	5	
20-inch	2	
24-inch	2	

MATERIAL USED.

New tops		12
New gland bolts		24
New set screws		28
New nuts		1
New rubber joints		3
Repaired valve screws		5
Centre plugs put in valve chamber tops		5
Extension spindles put on		4
Hydrants rebuilt in shop		132
2-ways	33	
3-ways	99	
4-inch	12	
6-inch (check)	6	
6-inch	276	

10-inch		1
12-inch		99
12-inch	(check)	2
16-inch	(check)	1
16-inch		4
24-inch		4
2-inch	(A.P.S.)	2
3-inch	(A.P.S.)	14
4-inch	valves (A.P.S.)	36
6-inch	" "	47
8-inch	" "	2
10-inch	" "	4
12-inch	" "	1

Number of mains blown out through hydrants	63
Number of 4-way hydrants repaired on street	9

MATERIAL USED.

New screws	2
Repaired screws	14
Valves (new)	4
New B. washers	15
New rubber joints	4
New cap leathers	11
¾ B. plugs	1
New chain rings	1
B. packing rings	1
Cap screws	1
Number of leather valves made in shop	549
Number of feet of sewer hose tested in shop	450
Number of hydrants placed on street (new hydrants)	377
New 3-ways	319
New 2-ways	58
Number of hydrants taken out and replaced on street	163
2-ways with 2-ways	106
2-ways with 3-ways	40
3-ways with 3-ways	9
3-ways with 2-ways	8
Number of hydrants taken out and mains plugged	3
2-ways	1
3-ways	2

SMITH SHOP.

New steel hooks	31
New rings	83

New chain rings	264
New steel forgings	28
New handles	12
⅝ stop cock rods made	6,700
Pounds iron used	35,242
¾ stop cock rods made	525
Pounds of iron used	2,076
New steel bolts	131
New bolts	107
New clamps	108
New chisels	124
New crowbars	13
New pair creepers	6
Boiler tools repaired	311
New boiler tools	12
New turnbuckles	1
New bursting wedges	13
New wedges	180

HIGH LEVEL PUMPING STATION.

4,174,045,593 gallons of water were repumped during the year. The daily average being 11,435,741 gallons.

Last year the average was 7,954,330, being an increase of 3,481,411 gallons, or 43½ per cent.

The cost of running the Station, including repairs, was $39,429.18.

The building containing the electric pumping units has been completed, with the exception of the tiling for the floor. The 4 domestic and 4 fire pumps have been installed and connected up. The switchboard is approaching completion, and the plant should be ready for operation early in the year.

MAIN PUMPING STATION.

14,973,240,863 gallons of water were pumped during the year, as follows:

Nos. 4 and 5 engines pumped	5,583,752,868
Nos. 6 and 7 engines pumped	9,389,447,995
	14,973,200,863
Pumpage for 1910	12,777,315,692
Increase over last year	2,195,885,171

being an increase of 17 per cent. over the pumpage at this Station for last year.

The daily average for 1911	41,022,577
The daily average for 1910	35,006,344
Average daily increase	6,016,233

Coal consumed during the year, 24,784.35 tons.

Cost of running the Station—

Coal and ashes, cartage, etc	$65,784 38
Wages, oil, waste and repairs	61,578 91
	$127,363 29

The reconstruction of the building, formerly occupied by Nos. 1 and 2 old Worthington engines, has been completed, and the four 13½-million gallon electric pumping units installed, increasing the capacity of the plant by 54 millions daily.

No. 4, electrically driven pump, was turned over on the 4th of December, No. 3 on the 16th, No. 1 on the 18th, and No. 2 on the 29th.

The Westinghouse Co. are pushing the completion of the switchboard and the erection of the resistance grids for the two 5-million gallon high pressure fire pumps.

Venturi meters have been installed on the electric equipment, and preparations made for installing them on the steam pumps.

WEST TORONTO PUMPING STATION.

The two pumps at this Station delivered 387,837,085 gallons to augment supply from Main Pumping Station; but for four months of the year they were shut down; steam, however, being kept up in case of fires breaking out in the district.

The cost of running the Station being $12,839.71.

EAST TORONTO PUMPING STATION.

The electrically driven turbine pumps at the beach pumped during the year 108,960,690 gallons, and the steam pump repumped into stand pipe 65,263,538 gallons of this quantity.

The cost of running the Station was $9,258.04.

ISLAND PUMPING STATION.

Pumping was started at this Station on the 1st of May, and continued up to November 7th, when the Station was shut down.

The cost of running, and the maintenance of system, was $5,299.88.

DETECTION OF WASTE.

The Council having granted an appropriation of $15,000 for this purpose, arrangements were made with the Pitometer Co., of New York, to make an inspection of the mains and services in order to ascertain the cause of the waste. The results show that practically 95 per cent. of the leakage is in the houses, and is due to leaky fixtures, wilful waste or carelessness, and about 5 per cent. in mains and services to stop cocks.

That by far the greater part of this waste in houses can only be stopped by the installation of meters, is the opinion of all water works men who have given the subject consideration. No amount of inspection can put a stop to wilful waste; and in addition, any sounding of stop cocks on the street is practically impossible in a climate such as ours, where the stop cock boxes are covered with snow and ice a great part of the time.

With the enormous yearly increase in the consumption, it is imperative that proper means should be taken to stop waste, otherwise the City must be prepared to go into very large expenditures for improvements if the supply and pressure is to be kept up in all sections.

The report of the Pitometer Co. is herewith inserted.

JOHN A. COLE & EDWARD S. COLE, ENGINEERS.

New York, January 2nd, 1912.

C. H. Rust, Esq., City Engineer, Toronto:

Dear Sir,—According to your instructions, we have made a careful Pitometer survey of a portion of the Toronto water system for the location of leakage or waste, whether from house fixtures or underground.

The area has been divided into twenty-three districts, as shown on the accompanying map, and the flow of water to each has been gauged from one to three days with a recording Pitometer.

As most of these districts are residential, the flow of water between 12.30 a.m. and 5 a.m., due to legitimate use, should be practically nothing. In all

cases the recording Pitometers showed a high night rate. We therefore subdivided the districts at night between these hours to locate the cause, and have been able to cover nearly all of the most wasteful sections. The conditions in the various districts are as follows:

District No. 1.

This contains the area between Wellesley Street, Gerrard Street, Yonge Street and Parliament Street. The flow was gauged from 12.30 p.m. October 25th, to 12.30 p.m. October 27th, and it was found that there was a mean flow of 751,000 gallons per 24 hours, and a minimum night rate of 480,000 gallons per 24 hours.

A preliminary test of this district was made in August. There was then a steady flow between 1.30 a.m. and 5 a.m. at the rate of 395,000 gallons per 24 hours. The district was subdivided and it was found that this high night rate was quite evenly distributed over all the streets. The services were sounded with an aquaphone and a large number of houses were found to have a continuous flow of water *during the night.* The mains were also carefully sounded, and no evidence of leakage could be found. Inspection of the fixtures in the houses in this district showed a large number of leaks, but in several houses with a continuous night flow, the fixtures were found to be in good condition, thus showing wilful waste.

District No. 2.

This contains the area between Gerrard Street, Queen Street, Jarvis Street and Parliament Street. The flow was gauged from 5.30 p.m. October 27th, to 5.30 p.m. October 29th. There was a mean flow of 547,000 gallons per 24 hours, and a minimum night rate of 400,000 gallons per 24 hours. This district was subdivided and the conditions were found to be about the same as in District No. 1, viz.: little or no loss from mains but much wilful waste and house fixtures allowed to run at night.

District No. 3.

This district includes the area between Yonge Street and George Street, from Gerrard to Queen Street, with the exception of Victoria Street, Bond Street and Gould Street, from Yonge to Church Street.

The flow into this district was gauged from 6 p.m. August 28th, to 6 p.m. August 31st, and it was found that there was a mean flow of 508,000 gallons per 24 hours.

The minimum night flow during this time was at the rate of 395,000 gallons per 24 hours, or about 77¾ per cent. of the mean flow.

As this district is residential, with the exception of some stables on Dalhousie Street, the flow between 12.30 a.m. and 5 a.m. should be practically nothing.

This district was subdivided, and the high night flow was found to be distributed as follows:

	Gals. per 24 hours.
Gerrard Street, Yonge to Dalhousie	30,000
Wilton Avenue, Yonge to Church	21,000
Wilton Avenue, Church to Jarvis	8,000
Shuter Street, Yonge to Church	49,000
Shuter Street, Church to Jarvis	3,000
Church Street, Queen to Wilton	26,000
Church Street, Wilton to Gerrard	21,000
Dalhousie Street, Queen to Wilton	18,000
Dalhousie Street, Wilton to Gerrard	37,000
Mutual Street, Queen to Wilton	49,000
Mutual Street, Wilton to Gerrard	16,000
Jarvis Street, Gerrard to Queen	50,000
George Street, Wilton to Gerrard	37,000
George Street, Queen to Wilton	30,000

The services were then sounded with an aquaphone, and a continuous flow of water to a large number of houses was found.

Later, these houses were inspected, and although quite a number of fixtures were found to be leaking, they would only account for a small part of the night flow.

A few services were found to be leaking between the curb cock and the main, and these were repaired. After these repairs had been made and the houses inspected, the night flow was again taken and showed a reduction of only 50,000 gallons per 24 hours.

As this dictrict was still in a very unsatisfactory condition, we took the streets with the heaviest night flow and shut off all the services; we then found that the flow to these streets stopped. This showed that the waste was in the houses, and that there was no leakage in the mains.

In most streets the waste was accounted for by a few houses having a large flow, the worst case being on George Street, between Gerrard and Wilton, where a continuous night flow of 34,000 gallons per 24 hours out of a total of 37,000 gallons was found to be going to the Boys' Home.

District No. 4.

This district is bounded by Gerrard Street, Queen Street, Broadview Avenue and Logan Avenue. The flow was gauged from September 1st to

September 2nd. There was a total of 276,000 gallons for the 24 hours, and a minimum night rate of 150,000 gallons per 24 hours.

There are some factories in this district, which account for the sudden heavy draughts shown in the accompanying diagram.

The flow in this district is not so heavy as in the others; we, therefore, have made no subdivision.

District No. 5.

Contains the area between Gerrard Street, Queen Street, Carlaw Avenue and Leslie Street. There was a mean flow of 319,000 gallons from 12 a.m. August 30th, to 12 a.m. August 31st. The minimum night rate was 95,000 gallons per 24 hours. This district was not subdivided.

District No. 6.

This district contains the area between Bloor Street, College Street, St. George Street and Robert Street.

The flow was gauged from September 3rd to September 5th. There was a mean flow of 572,000 gallons per 24 hours, and a minimum night rate of 400,000 gallons per 24 hours, or about 70 per cent. of the mean flow.

The City Dairy was gauged on several nights, and the flow varied from 72,000 to 96,000 gallons per 24 hours. On subdividing the district the conditions were found to be much the same as in the others, viz.: little or no loss from mains but wilful waste from house fixtures, the heaviest night flow being found as follows:

	Gals. per 24 hours.
Sussex Street, St. George to Robert.....	28 000
Harbord Street, St. George to Spadina.....	23,000
College Street, St. George to Spadina.....	24,000
St. George, Bloor to Hoskins	26,000
Spadina Avenue, Bloor to Harbord.....	15,000
Bloor Street, Brunswick to St. George.....	23,000

All these quantities were accounted for by waste inside the houses; there was no leakage in the mains.

District No. 7.

This district is bounded by Dupont Street, Bloor Street, Walmer Road and Huron Street, and was gauged from 11 a.m. October 18th to 11 a.m. October 20th. There was a mean flow of 301,000 gallons per 24 hours and a minimum night rate of 180,000 gallons, or nearly 60 per cent. of the mean flow. This district has not been subdivided.

District No. 8.

This district includes the area between Dupont Street, Bloor Street, St. George Street and Avenue Road.

There was a mean flow of 532,000 gallons per 24 hours from September 8th to September 10th, and a minimum night rate of 385,000 gallons per 24 hours.

There were 7 sewer flush tanks in this district, with a total flow of 131,000 gallons per 24 hours. This is an unnecessarily large amount of water to use for this purpose.

The district was subdivided at night, and the flow was found to be distributed as follows:

Name of Street.	Total night flow in gals. per 24 hours.	Part of total flow to sewer flush tanks in gals. per 24 hours.
Dupont St., Davenport to Avenue Rd.....	14,000	
Chicora Ave.	5,000	
Pears Ave., Bedford Rd. to Avenue Rd.....	14,000	
Pears Ave., east of Avenue Rd.....	23,000	
Davenport Rd., Dupont St. to Bedford Rd....	5,000	
Davenport Rd., Bedford to Avenue Rd.....	21,000	17,000
Bernard Ave., St. George St. to Bedford Rd..	9,000	
Bernard Ave., Bedford Rd. to Avenue Rd....	30,000	17,000
Tranby St.	8,000	
Boswell Ave.	14,000	
Elgin Ave.	21,000	17,000
Lowther Ave., St. George St. to Avenue Rd..	28,000	20,000
Prince Arthur Ave., Bedford Rd. to Avenue Rd.	32,000	22,000
Prince Arthur Ave., St. George St. to Bedford Rd.	6,000	
Bloor St., St. George St. to Avenue Rd.....	23,000	
St. George St., Bernard to Lowther Ave.....	7,000	
St. George St., Dupont St. to Bernard Ave..	14,000	
St. George St., Lowther Ave. to Bloor St....	5,000	
St. George St. 16-in. main, Dupont to Bloor.	0	
Admiral Rd., St. George St. to Bernard Ave.	6,000	
Admiral Rd., Bernard Ave. to Lowther Ave.	23,000	15,000
Bedford Rd., Dupont St. to Davenport Rd...	5,000	
Bedford Rd., Davenport Rd. to Lowther Ave.	30,000	23,000
Bedford Rd., Lowther Ave. to Bloor St.....	4,000	
Avenue Rd., Macpherson to Davenport Rd...	11,000	
Avenue Rd., Davenport Rd. to Elgin Ave....	12,000	
Avenue Rd., Elgin Ave. to Bloor St.....	15,000	

The services were sounded and the conditions were found to be practically the same as in District No. 3.

District No. 9.

This contains the area between Dupont Street, College Street, Grace Street and Shaw Street. There was a mean flow of 372,000 gallons per 24 hours between 8 p.m. September 15th to 8 p.m. September 17th. The minimum night rate was 245,000 gallons per 24 hours or nearly 66 per cent. of the mean flow. This district has not been subdivided.

District No. 10.

This contains area between Dupont Street, College Street, Clinton Street and Markham Street. There was a mean flow of 595,000 gallons per 24 hours from 11 p.m. September 19th to 11 p.m. September 21st. The minimum night rate was 305,000 gallons per 24 hours; 265,000 of this was found to be south of Bloor Street.

District No. 11.

This district contains the area between Bloor Street and College Street, from Bathurst Street to Robert Street.

The flow was gauged from September 25th to September 28th; there was a mean flow of 728,000 gallons per 24 hours and a minimum night rate of 510,000 gallons per 24 hours.

The district was subdivided, and the night flow or waste was found to be distributed as follows:

	Gals. per 24 hours.
Bloor Street, Bathurst to Brunswick	6,000
Lennox Street, Bathurst to Borden	18,000
Herrick Street to Borden	3,000
Sussex Avenue, Borden to Robert	7,000
Harbord Street, Bathurst to Robert	35,000
Ulster Street, Bathurst to Lippincott	0
Ulster Street, Lippincott to Major	9,000
College Street, Bathurst to Spadina	60,000
Bathurst Street, Bloor to Harbord	28,000
Bathurst Street, Harbord to College	15,000
Lippincott Street, Bloor to Harbord	25,000
Lippincott Street, Harbord to College	90,000
Borden Street, Bloor to Harbord	17,000
Borden Street, Harbord to College	62,000
Brunswick Avenue, Bloor to Harbord	23,000
Brunswick Avenue, Harbord to College	15,000
Major Street, Bloor to Harbord	18,000
Major Street, Harbord to College	41,000
Robert Street, Bloor to Harbord	9,000
Robert Street, Harbord to College	29,000

This district was carefully tested, and it was found that with the exception of a few services leaking between the curb cock and the main, which accounted for about 5 per cent. of the night flow, the waste was entirely in the houses.

In Lippincott Street, between Harbord Street and Bloor Street, a continuous flow at the rate of 67,000 gallons per 24 hours was found to be distributed amongst 12 houses.

The actual consumption in this district should be less than 200,000 gallons per 24 hours; it will thus be seen that there is an unnecessary waste of over half a million gallons per 24 hours in this small section of the City alone.

District No. 12.

Is bounded by Dupont Street, Bloor Street, Bathurst Street, Kendal Avenue and Brunswick Avenue. It was gauged from 6 p.m. September 30th to 6 p.m. October 2nd. There was a mean flow of 340,000 gallons per 24 hours, and a minimum night flow at the rate of 235,000 gallons per 24 hours; this is over 69 per cent. of the mean flow.

District No. 13.

This district contains the area between Bloor Street, College Street, Havelock Street and Givens Street. There was a mean flow of 504,000 gallons per 24 hours from 5.30 p.m. October 9th to 5.30 p.m. October 11th. The minimum night rate was 355,000 gallons per 24 hours, or roughly, 70 per cent. of the mean flow.

District No. 14.

This district contains the area between Van Horne Avenue and Bloor Street, from Westmoreland Avenue to Shaw Street. The flow was gauged from 10 a.m. October 18th to 10 a.m. October 20th. There was a mean flow of 527,000 gallons per 24 hours. The minimum night flow was at the rate of 370,000 gallons per 24 hours.

The district was subdivided, and the night flow was found to be distributed as follows:

	Gals. per 24 hours.
Delaware Avenue, Shanley to Van Horne.....	22,000
Bartlett Avenue, Shanley to Bloor.....	24,000
Concord Avenue, Van Horne to Northumberland.....	26,000
Bloor Street, Dovercourt to Givens.....	78,000
Hallam Street, Dovercourt to Concord.....	17,000

In the remainder of the district the night flow was quite evenly distributed. A leak of 45,000 gallons per 24 hours was found on the 12-in. main

on Bloor Street at Ossington Avenue. This was due to some lead having blown out of one of the joints. The remaining night flow of 33,000 gallons per 24 hours on this length of Bloor Street, was caused by waste inside the houses. This was also the cause of the other waste in this district. The mains, with the exception of the leak above mentioned, were quite tight.

District No. 15.

This contains an area roughly bounded by King Street, Simcoe Street, Sherbourne Street and Lake Ontario. These streets were only gauged at night between 12.30 a.m. and 4.30 a.m. There was a large flow of water found inside the buildings on Wellington Street, and the adjoining streets. Most of the services in this district were metered, and a large proportion of the flow was due to legitimate consumption. Two leaks, amounting to 43,000 gallons per 24 hours, were found on Bay Street, just north of Front Street. One was caused by a lead joint on the 6-in. main, the other by an old service. A leak of 51,500 gallons per 24 hours was found on the 6-in. main at Piper and York Streets; this was due to the lead having blown out of one of the joints. A leak of 38,000 gallons per 24 hours was found on a 6-in. hydrant main close to the C. P. R. tracks at the foot of Yonge Street. This was also caused by a lead joint.

A leak of 170,000 gallons per 24 hours was found on Frederick Street; this was caused by a break in a 1-in. service pipe, which singularly enough occurred just inside a sewer through which it passed.

District No. 16.

This contains the area between Bloor Street, College Street, St. Helens Avenue and Gladstone Avenue. The flow was gauged from 5 p.m. October 26th to 5 p.m. October 27th, the mean flow being 465,000 gallons, and the minimum night flow at the rate of 275,000 gallons per 24 hours. This district was not subdivided.

District No. 17.

This area is bounded by Royce Avenue, Bloor Street, Gladstone Avenue and the G. T. R. tracks. It was gauged from 10 a.m. October 29th to 10 a.m. October 31st. There was a mean flow of 475,000 gallons per 24 hours, and a minimum night rate of 300,000.

District No. 18.

This contains the area between Bloor Street, Grenville Street, Yonge Street and Queen's Park Crescent. It was gauged from 11 a.m. November 7th to 11 a.m. November 9th. There was a mean flow of 503,000 gallons per 24 hours, and a minimum night rate of 355,000 gallons per 24 hours. This district is not entirely residential.

District No. 19.

This contains the area between Davenport Road, Belmont Street, Bloor Street, Avenue Road and Yonge Street. The flow was gauged from 8 p.m. November 9th to 8 p.m. November 11th, and there was a mean flow of 479,000 gallons per 24 hours, and a minimum night rate of 300,000 gallons per 24 hours.

District No. 20.

This contains the area between Gerrard Street, Queen Street, Parliament Street and Sumach Street. It was gauged from 12.30 p.m. November 25th to 12.30 p.m. November 26th. There was a mean flow of 539,000 gallons per 24 hours, and a minimum night rate of 480,000 gallons per 24 hours, or 89 per cent. of the mean flow. This district should have been subdivided to find the cause of this excessive night flow, but as it was only gauged a few days before our departure, time would not permit.

District No. 21.

This district contains the area between Gerrard Street, Queen Street, Sumach Street and the River Don. It was gauged from 1 p.m. November 18th to 1 p.m. November 20th. There was a mean flow of 381,000 gallons per 24 hours, and a minimum night rate of 330,000 gallons, or 86 per cent. of the mean flow.

There are several factories in this district, and as the gaugings included a Saturday afternoon and Sunday, this will probably account for the high percentage of the night flow.

District No. 22.

This district included the area between College Street, Arthur Street, Bathurst Street and Grace Street. It was gauged from 4.30 p.m. November 23rd to 4.30 p.m. November 24th. There was a mean flow of 311,000 gallons and a minimum night rate of 230,000 gallons per 24 hours, or 74 per cent. of the mean flow.

District No. 23.

This district was bounded by College Street, Dundas Street, Dufferin Street and Beatrice Street. It was gauged from 5.30 p.m. November 26th to 5.30 p.m. November 27th. There was a mean flow of 593,000 gallons per 24 hours, and a minimum night rate of 410,000 gallons per 24 hours, or slightly over 69 per cent. of the mean flow.

The twenty-two districts gauged with the recording pitometer showed a total mean flow of 10,618,000 gallons per 24 hours, and a minimum night flow at the rate of 7,185,000 gallons per 24 hours, or about 67½ per cent. of the mean flow.

In the districts subdivided, we found that the high night flow is almost entirely caused by waste inside the houses. This is due to leaking fixtures, careless and wilful waste, and can only be controlled by the installation of meters.

The mains in these districts are remarkably free from leakage as shown by our tests, for after closing all the curb cocks the flow practically stopped, thus proving the mains to be tight.

The district around Front Street, where we found several leaks on the mains, should be surveyed for the entire length of the water front, as owing to the nature of the ground a considerable amount of underground leakage will probably be found.

In closing we wish to express our appreciation of your hearty co-operation and the efficient help rendered us by your assistants.

Respectfully submitted,

JOHN A. & EDWARD S. COLE,
Engineers.

BY EDWARD S. COLE.

MR. E. ROBERT HOWLAND,
Engineer in charge.

SIX-FOOT STEEL CONDUIT.

The storm of 7th and 11th February scoured out the sand from under 600 feet of the conduit to a depth of 6 feet below the grade the conduit was laid to, causing the bolts (connecting the pipes, which were in lengths of about 150 feet) to be sheared off, and allowing the pipe to drop—one of the pipes being rolled clear of the pipe line. This resulted in an in-rush of sand, blocking the pipe and cutting off the supply to the City.

As it was imperative that a supply be obtained without delay, advantage was taken of the small basin on the Island, with which the 6-ft. pipe has a connection; this was opened as soon as a channel had been made between Long Pond and the basin, and the pumps set to work again.

The only place, other than this, a supply could have been obtained from, was at the Main Pumping Station, where a 3-ft pipe led from the bay to the pumps, and as this was sewage polluted water, it was not considered advisable to use it.

The water from Long Pond, on analysis, proved to be even better than the Lake water at that time. In addition it was chlorinated at the south tunnel shaft, about a mile from the Pumping Station, so that there was absolutely no danger to the public from it.

In order to prevent pollution from the Bay affecting Long Pond supply, dams were constructed across all openings between the two, and to keep up the supply an opening was dredged into the Lake and piled to feed Long Pond.

In the meantime all the plant available was set to work raising the pipe and bring it ashore for examination and repairs; while pumps and men were working on shore cleaning the sand out of the pipe for a distance of 400 feet from the shore south into the Lake, and for some 2,500 feet north of Lake.

Advantage was taken of a manhole on the pipe, where the water over same was 10 feet deep, to place a temporary intake on same, which was put in use as soon as the pipe had been cleared of sand.

In the meantime the work of relaying the disconnected pipe was proceeded with, and the whole completed by August 17th; after which the supply was drawn from the intake proper, the temporary intake removed and the manhole cover replaced.

It was found necessary, in order to stop the scour under the pipe, to drive a row of interlocking steel sheet piling on each side of the pipe; these piles were 18 feet long and 12 inches wide, and were driven so as to leave the tops 1 foot above the top of the pipes; the spaces between, under and over the pipe to be eventually filled with concrete. This work is now under way.

NEW DUPLICATE INTAKE.

On January 19th, 1911, the then City Engineer, Mr. Rust, reported to the Board of Control advising the duplication of the existing 6-foot steel conduit into the Lake, extending from the tunnel shaft near Mugg's Landing southerly across the Island into Lake Ontario, the intake to be situated at a point about 1,000 feet west of the existing intake. This recommendation was made for the reason that the existing conduit could only be depended upon to deliver about 50 million gallons per 24 hours during low stages of the Lake, and as the maximum rate of pumpage during the busy hours of the day was 45 to 47 million gallons per 24 hours, the capacity of the existing intake and conduit would no doubt

be taxed to its fullest extent by the time the duplicate intake was constructed and ready for use. This recommendation was not acted upon till June of this year. In the meantime, a violent storm, which occurred on the 7th and 11th February, scoured out the sand from beneath the existing conduit to a depth of 6 feet, and for a distance of 600 feet, causing the same to drop, shearing off the bolts connecting the several lengths, blocking the mouth of the pipe with sand, and cutting off the supply to the City. The Board of Water Commissioners appointed shortly after the accident reported on the immediate necessity of proceeding with the construction of a duplicate intake, upon which tenders were called by the Board in May of this year, and a contract signed in July, the successful tender being that of Roger Miller & Sons, the price tendered for the laying being $259,900. A contract was also let to the Canada Foundry Co. for the construction of the 6-ft. steel conduit, together with flexible and expansion joints for same, the pipe costing $20.75 per foot, the steel expansion joints $550 each, and the steel flexible joints $1,750, and the new intake branch $2,000; the total length of pipe being about 3,000 feet, made up in lengths of 150 feet each, approximately. The contractor, at the close of the season, had excavated a trench on the Island and laid about 450 feet of the pipe, together with a connecting tank placed at the Lake shore, and is now devoting his time during the winter to the construction of the necessary plant to enable him to complete the work expeditiously in the spring.

Yours, etc.,

C. L. FELLOWES.

Water Works Filtration Plant.

C. H. Rust, City Engineer:

Dear Sir.—Herewith I beg to submit a statement of the work carried out in connection with the Filtration Plant for the year 1911.

At the end of the year 1910, the filter masonry work was, in a general way, about half completed. None of the filtering material had yet been placed. Most of the concrete and cast-iron pipe work had been completed.

Work was carried on throughout the winter of 1910-1911, on the placing of pier and wall masonry, special precautions being taken to properly protect it against the action of frost. In this way some 2,000 yards or more of concrete was placed in freezing weather with perfect success.

With the opening up of the working season of 1911, active steps were taken to press the concrete work to an early finish. Steps were also taken looking towards the preparation of filter gravel and filter sand. Substantially the last of the filter masonry was placed by the first of September. The last of the filter sand was placed early in November.

The arrangements at the outlet of the Pure-Water reservoir at this time were as follows:—

The 6-ft. concrete outlet pipe from the reservoir was completed, and was connected with the 6-ft. steel pipe running from the Shore Crib to the Tunnel by means of a massive monolithic concrete structure completely surrounding this steel pipe, through which the main supply for the City was flowing. Before any water could be discharged from the filters into this steel pipe and thence to the City, a large section had to be cut out of the side of the steel pipe within this monolithic structure. The method chosen for cutting out this section of the steel pipe was an oxy-acetylene flame. This necessitated drain the 6-ft. steel pipe leading to the City. The draining of this pipe involved the temporary interruption of the City's water supply, and, therefore, it was necessary to carry out this work with as much rapidity as possible. The pipe was

drained one night by closing the gate connecting with the lake at about 6.30 p.m. The pumps at John Street continued pumping until the pipe was empty. The oxy-acetylene apparatus was then lowered into the pipe, and the work commenced. Towards 5 o'clock in the morning it became evident that the work could not be completed in one night, and, therefore, the work was discontinued, the apparatus removed, and the gate opened again, permitting the 6-ft. pipe to fill to its normal level, after which the pumps at John Street were again started.

As soon as possible this procedure was repeated, and the rest of the section of the steel pipe was completely removed. This was about the first of December. Meanwhile, the Toronto Hydro-Electric System had completed their temporary lines from the mainland to the Island Station, and were prepared to supply power for operating the filtration pumps. The filters were then put in service. It was impracticable to put them all in operation at one time, but they were filled and started successively, and by the last of December a number of them had been turned into the City supply. We were practically ready to supply the entire City with filtered water, and to close the gate which supplied unfiltered lake water to the City.

Early in the year 1911, the Laboratories of the Filtration Plant were equipped, and the services of a Chemist and Bacteriologist with suitable technical qualifications were secured, to take charge of the Laboratories. Examinations were conducted throughout the year on the Toronto Water Supply, and as soon as the filters began to be operated, routine examinations were made to determine their efficiency. The report of the Chemist and Bacteriologist will be found elsewhere in this report.

Yours very truly,

FRANCIS F. LONGLEY,
Resident Engineer, Filtration Plant.

FILTRATION PLANT LABORATORIES.

FILTRATION PLANT LABORATORIES.
February 5th, 1911.

Mr. C. H. Rust, City Engineer:

DEAR SIR,—I beg to submit my first annual report on the work done in the laboratories of the Waterworks Department. Although appointed in February, 1911, the routine examination of the water supply was not commenced until a later date, owing to the incomplete condition of the laboratories. By the 1st of April, sufficient apparatus had been installed to permit of a partial examination being made, and, on this date, the daily analysis of the water was commenced, various determinations being added from time to time until the scheme included a complete chemical and bacteriological sanitary examination. Although the results so far obtained have shown that chemical analysis is not nearly so delicate a method of detecting the presence of small quantities of sewage contamination as the bacteriological examination, nevertheless, I have decided to proceed with it daily for a period of twelve months, in order to ascertain what relation exists between the results of the two methods. Chemical analysis is itself valuable, as it is the only method known of determining the amount of pabulum present favorable to the biological processes inseparable from a water supply. The larger the amount of organic matter present, the more favorable, with reasonable limits, is the media for the growth of the bacteria, and also of the higher forms, which, although they may be unobjectionable hygienically, seriously interfere with the sand filters by rapidly choking the interstices of the surface layer and reducing the rate of filtration.

The bacteriological methods employed are those advised by the Laboratory Section of the American Public Health Association, and consist of the enumeration of the total bacteria present by cultivation on nutrient gelatine, and the determination of the Typical Bacilli Coli Communis. The period of growth specified by the Association is two days, but as I found this period unsuitabe for chlorinated waters, it was increased to three days. This is in accordance with the best English practice. The Coli tests involve preliminary enrichment in glucose broth, followed by a litmus lactose agar plate. The red colonies from

this are transferred to standard agar slopes, and finally subcultivated in detrose broth for gas formation, nitrate broth for nitrite formation, litmus milk, and peptone broth for indol formation. A gelatine stab culture for liquifaction was also used in the earlier work, but as this test caused the rejection of less than 1% of the samples, it was omitted in the later work as being unnecessary. The English method of enrichment in bile salt broth was also tried, but from the results obtained I was compelled to conclude that it was quite unsuitable for the Lake Ontario water. The bile salt restrained the growth of the gas-forming bacteria present, and failed in many cases to give a presumptive reaction even though other tests showed the presence of typical B. Coli.

Direct plating of the samples in litmus lactose agar gave no information regarding this organism, as the proportion of non-acid producers to the red colon forms was too great. The lake water is generally much too pure for the satisfactory use of this method.

Whilst discussing this subject, it will not be inopportune to refer to the reason d'être of testing for the specific organism known as B. Coli Communis. This organism, as the name indicates, is the common bacillus of the colon or large intestine, and is, therefore, always found in sewage and sewage effluents. B. Coli Communis is itself non-pathogenic, but as the sewage from a large community invariably contains such pathogenic forms as typhoid and dysentery bacilli, B. Coli Communis is generally associated with these types, and if typical B. Coli is found in water to which sewage has access, the presence of pathogenic forms is inferred. Typhoid bacteria are not tested for in water, as the process for their detection is lengthy, laborious, and generally unsatisfactory. Dr. Houston has tested the heavily-contaminated River Thames daily for long periods without a single success, although artificially infected samples gave successful results. Until the science of bacteriology has progressed considerably, the pathogenicity or otherwise of a water must be by inference from the B. Coli tests, in conjunction with a topographical examination. The latter is necessary because water supplies sometimes show typical B. Coli although far removed from human habitation. This is explained by the fact that B. Coli is also normal to the excrement of birds and animals, although typhoid is unknown amongst them.

The enumeration of the bacteria present is chiefly valuable from the point of view of purification works, as it does not give much information regarding the sanitary quality of the supply. A pure supply undoubtedly shows a low bacterial count, and a contaminated supply

a high one; but mere enumeration does not give any idea as to the nature of the organisms: which is all-important. The purification effected by any process is usually judged by the enumeration method in conjunction with the tests for specified organisms. The quantitative estimate of physical methods is founded on the enumeration alone.

CHEMICAL.

The chemical methods used are those usually employed by English and German chemists, and include:

Free Ammonia,
Albuminoid Ammonia,
Oxygen absorbed in 4 hrs. at 27° C.
Chlorine,
Nitrates by direct nesslerisation after reduction with zinc copper couple and oxalic acid,
Dissolved oxygen.

PHYSICAL.

Physical determinations include the turbidity (U. S. Geological Survey method), color, and determination of the algae, diatoms, etc., present. The water, during the last nine months, has possessed so little color that it could not be determined.

The results of these various tests, as applied to the various samples, will be found in the tables at the end, where they are set out in extenso.

SOURCE OF SUPPLY.

The supply, for some months in the spring, was taken, owing to the temporary disablement of the intake pipe, from the basin on the north side of the Island. Whilst the weather remained cold and the bay was covered with ice, the water at the basin was not appreciably worse than the inshore lake water, but on the advent of warm weather the temperature increased quickly, and the contamination rapidly increased. Early in May the Clandeboye Cut, recommended by the Board of Experts, was completed, and lake water, instead of bay water, was admitted to the basin. This was a decided improvement as regards the source of supply, although the body of water known as Long Pond failed to cause any improvement, either organically or physically.

Toward the latter part of the month of June, the temperature of Long Pond increased so much as to cause a luxurious growth of weeds,

which became so abundant as to impart a distinct taste to the water. This condition obtained until June 29th, when the temporary intake was put into operation. This intake gave a supply that was of fair bacteriological quality, but was too near the surface and shore to be cool enough to supply a refreshing beverage. This was especially noticeable during the first week in August, when the temperature of the water reached 71.5° F. Immediately the old intake was put into operation the temperature dropped to 64° F., and since that time has never been beyond 69° F.

LAKE SAMPLES.

In order to ascertain the general conditions of the Lake on the south shore of the Island, and especially in the vicinity of the intake, samples were taken at various points (vide map) and examined. These samples were taken once a week for several weeks, and do not represent any especial set of conditions, normal or otherwise. One day was set apart for this purpose, and the samples were, if physical conditions permitted, collected on this day. The only way of accurately determining the quality of a water supply is by the regular examination of samples taken under all obtaining conditions. Samples taken during storms, or just after, represent abnormal conditions, and are comparatively worthless, as it is well known that easterly storms bring polluted water into the vicinity of this City, and this period of abnormal pollution is usually followed by one of abnormal purity.

It will be seen from the results obtained that there is strong evidence of sewage pollution on the western shore of the Island. The pollution diminishes as Lighthouse Point is turned, and the best water of the neighbourhood is obtained in the vicinity of the present intake. The samples taken 600 feet south of the present intake are superior to those taken at the intake itself, but the difference is so slight as to be inappreciable.

The results of each series of samples are given in the tables (page 65), and the bacteriological results are collected and given diagrammatically in the sketch appended. Page 70 gives the results of a series taken on a course due south from the Lighthouse Point, and page 71, those of a series taken from Humber Bay. The former ones show that under the conditions then prevailing considerable sewage contamination was detected 7½ miles out, and at a depth of 50 feet. This, confirmed by similar results obtained by Dr. Nasmith, condemns as a fallacy the

statement so commonly heard, to the effect that the great body of the Lake is pure, and the present difficulty is merely the engineering one of reaching it. If the Lake is contaminated 7½ miles south of Toronto, there is no reason why it should be much purer at greater distances, and it is possible, if not probable, that it is less pure. It is well known that the water on the south shore of Lake Erie is far from satisfactory, and this condition is aggravated by the discharge of the sewage of the City of Buffalo. This quantity is estimated at 160,000,000 gallons per day, and during flood times the Buffalo River, draining a well-populated area, discharges as much as 20,000 cu. ft. per sec. The quality of the water at the entrance to the Niagara River is, therefore, very unsatisfactory, and any purification that may be effected by oxidation in the Niagara River is nullified by the pollution that is caused by the sewages of the Tonawanda, Lockport and Niagara Falls. These towns obtain their water supply from the river, and the typhoid rate, as given in the following table, shows clearly the dangerous condition of this water.

TYPHOID RATE PER 100,000.

	Lockport.	Tonawanda.	North Tonawanda.	Niagara Falls.
1898	145.7	40.7	24.3	107.9
1899	18.1	13.5	23.1	113.0
1900	18.0	13.4	11.0	123.3
1901	71.5	13.3	32.3	143.7
1902	35.4	....	10.5	148.1
1903	75.7	26.0	41.1	114.0
1904	34.6	38.4	30.2	135.3
1905	51.8	25.3	39.3	184.4
1906	67.6	50.6	19.3	154.5
1907	50.1	25.0	47.2	126.0
1908	55.8	....	55.7	98.0
1909	49.7	27.3	55.6	74.9

Before flowing into Lake Ontario, the stream also receives the sewage of Niagara-on-the-Lake. It may be accepted, then, as a fact, that the Niagara River discharges immense quantities (about 220,000 cu. ft. per sec.) of highly contaminated water into Lake Ontario. This stream forms an eastward current in the southern portion of Lake Ontario, and produces a slight eddy current in the opposite direction along the northern bank. This current is not necessarily a portion of the Niagara River itself, but as the pollution in the River must be more or less distributed throughout the whole Lake, this eddy current contains a portion, and the factor to be decided is the amount of self-

purification that is effected before reaching Toronto. All the bacteriological studies that have been made show that although dilution and oxidation are fairly complete, traces of matter of faecal origin can still be detected and that the water is, in its raw state, unfit for alimentation. This being the case, it is highly desirable that Toronto, before undertaking the responsibility of sewage sterilization, should have guarantees that other Cities on the Lakes will adopt similar methods. Even if this were adopted, Toronto would still require purification works, to guard against uncontrollable pollution, and to remove the excessive turbidity that is occasionally found in the Lake supply.

HUMBER BAY.

The samples taken in Humber Bay are too small in number to yield any definite conclusions.

BAY SAMPLES.

Several series of samples were taken from the bay, beginning at various points in the City where sewer outfalls were located, and finishing at Hanlan's Point. Whilst they are not immediately connected with the water supply question, they are of interest as showing the condition of the Harbor. The bacterial content is so enormous compared with the intake supply, as to shatter any theory that undiluted bay water reaches the intake pipe in a direct current. As might be expected, these samples show that the most polluted water is to be found on the north shore of the Harbor; but, even at Hanlan's Point, the bay is so grossly contaminated as to be unfit for consumption. This water is not, so far as I am aware, used for domestic purposes, but it must not be forgotten that it is used for ornamental purposes at the Point, and that this system is connected with the Island supply. I understand, however, that the pressure in the bay water system is much less than in the Island services, and that it is, furthermore, protected by a valve between the two. (Vide page 43.)

SEWAGE SAMPLES.

Several samples of sewage were collected in connection with the bay water series, and in November, many more were secured, whilst the re-gauging of the sewers was in progress. These samples were not composite ones; i.e., do not represent the average composition of the 24 hrs. flow. Although it is possible to take composite samples for chemical purposes, it is impossible to do so for bacteriological examination, owing to the rapid bacterial increases that would ensue during the period of

sampling. The results of the bacteriological examination of sewage are only of value in connection with its treatment with germicidal agents, and as these would, if applied on a large scale, be added to comparatively fresh sewage, I thought it advisable to experiment with samples which were unaltered in composition. Tables on pp. 45 et seq., give the results of the complete chemical and bacteriological examination of the samples as received, and bacteriological results after treatment with varying amounts of chlorine. This was carried out with the object of determining what amount of chlorine would be required for the total elimination of the excremental organisms as judged by the B. Coli test. This forms the basis of an estimate of the cost of such treatment as expenditure for chlorine would be over 95% of the total. When the new outfalls works are completed the danger of sewage pollution of the intake will possibly be greater than at present, and further treatment of the effluent will, under certain meteorological conditions, become necessary. The results obtained show that with perfect conditions of admixture B. Coli can be practically eliminated by the use of small quantities of chlorine.

It remains to be proved that results, such as were obtained by chlorination in the laboratory of small quantities of sewage in glass containers, can be duplicated on the large scale, but they show what the possibilities are in this direction. The problem to be solved is purely the mechanical one of perfect admixture, and ought not to present serious difficulties. Further experiments should be made with a view to determining the amount of free chlorine left after chlorination, as this substance, when present in appreciable quantities, has an inimical effect on fish life, and ought, therefore, to be reduced to a minimum.

ISLAND SUPPLY.

Early in the season it was decided to chlorinate the Island Supply. On account of the water being passed directly into service without storage, it was thought that it would be difficult to do this consistently with securing the full efficiency of the chlorine, as it is generally understood that considerable time is required for the action to be made manifest. However, an apparatus was designed by Mr. Henning, the Chief Engineer at the Island Pumping Station, erected, and put into operation during the month of June. The essential features of this device are a small pump, the piston of which is connected with the piston of the large pump, and a perforated nozzle for the discharge of the chlorine solution into the outlet pipe from the pump. By the former, each delivery of water from the large pump receives its quota of bleach

solution from the small one, and the two are efficiently mixed by means of the perforated nozzle. The pump and connecting pipes were all constructed of brass. This is not considered a suitable material for this class of work, but after six months' use these pipes showed no evidence of corrosion. This is partially due to the very low concentration of the solution used, and it is quite possible that with higher concentrations bronze is preferable, if not essential.

The results obtained from this method of treatment are given in the following table:—

ISLAND SUPPLY.

Week Ending.	Cl. p.p.m.	Bacteria per c.c. before Treatment.	Bacteria per c.c. after Treatment.	Percentage Reduction.	Percentage of Samples Showing Typical B. Coli in		
					50 c.c.	10 c.c.	1 c.c.
July 6.....	.20	412	31	94.7	Nil.	Nil.	Nil.
" 13.....	.20	742	76	93.2	"	"	"
" 20.....	.20	561	3	99.2	"	"	"
" 27.....	.20	1,334	7	99.2	"	"	"
Aug. 3.....	.20	1,094	8	98.8	"	"	"
" 11.....	.20	422	4	99.1	"	"	"
" 18.....	.20	474	26	95.7	"	"	"
" 25.....	.20	2,280	5	97.7	"	"	"
Sept. 1.....	.20	399	16	95.8	"	"	"
" 8.....	.20	1,078	35	97.5	"	"	"
" 15.....	.20	584	7	90.7	"	"	"
" 22.....	.50	919	82	78.7	33.3	"	" x
" 29.....	.50	47	1	93.5	Nil.	"	"
Oct. 6.....	.50	82	6	86.4	"	"	"
" 13.....	.50	230	20	82.5	"	"	"
" 20.....	.50	872	3	95.4	"	"	"
" 27.....	.50	3,095	33	99.2	"	"	"
Nov. 3.....	.50	4,537	3	99.9	"	"	"
" 7.....	.50	1,770	3	99.6	"	"	"

NOTE "x."—During this week the check valves of the chlorinating apparatus were defective, and water was being passed into service unchlorinated.

The treated samples were taken within a few yards of the point where the chlorine solution was added, and tested as quickly as possible. It will be seen from these figures that even with this extremely short period of contract, excellent results were obtained throughout the whole season, the percentage reduction being high and the treated waters free from typical B. Coli; these waters would pass an extremely high standard of purity.

Samples were also taken at Hanlan's Point and Island Park, and although these were also free from B. Coli, the samples often gave a total count higher than the untreated water.

Although there is often a partial revival of the bacteria after chlorination, this does not occur within the period that the water normally remains in the Island Mains, and other causes must, therefore, be looked for. The inside surface of water mains is often coated with organic growths, and this, I thought, was the probable cause of the phenomenon observed. Blowing out the mains gave little benefit, and, although the increased count was reduced by the application of a strong solution of chlorine, this relief was but temporary. It is possible that this growth is only partially killed by chlorine, and at the first opportunity I intend to investigate this point.

During the early part of the year I found that chlorinated waters, when incubated beyond the normal period, showed abnormal increases in the number of colonies developing in a given unit of time. Typical examples are shown in the following tables:—

EXPERIMENT NO. 1—CITY WATER.

Treatment, Available Cl. Equals 0.25 p.p.m. City Plant.

Plated.		Count After.					Ratio.	
Time.	Day.	48 Hours.	72 Hours.	96 Hours.	120 Hours.	144 Hours.	2:6 Days.	2:5 Days.
10	1	17,600	21,440	Liquid				
12	1	1,570	5,820	12,000	11,680	11,960	1:6.9	
2	1	752	650	1 250	3,460	3,680	1:4.9	
4	1	692	1,440	2,910	4,520	5,240	1:7.5	
10	2	165	410	620	930	.....	.....	1:5.6

EXPERIMENT NO. 1—CONTROL, LAGOON.

Plated.		Count After.					Ratio.	
Time.	Day.	48 Hours.	72 Hours.	96 Hours.	120 Hours.	144 Hours.	2:6 Days.	2:5 Days.
10	1	260	296	338	380	404	1:1.5	.....
12	1	254	304	310	364	412	1:1.6	.....
2	1	246	244	236	368	432	1:1.7	.....
4	1	318	474	508	510	540	1:1.7	.....
10	2	12,880	12,440	13,960	14,000	.....	.....	1:1.08
10	3	288,000	508,000	630,000	.....	.....	.....	.....

Original sample, untreated, 23,700.

EXPERIMENT NO. 2—CITY WATER.

Treatment, Available Cl. Equals 0.25 p.p.m., City Plant.

Plated.		Count After.					Ratio.	
Time.	Day.	48 Hours.	72 Hours.	96 Hours.	120 Hours.	144 Hours.	2:6 Days.	2:5 Days.
10	1	14,000	16,800	28,000	Liquid	.....	.....	.....
12	1	3,400	5,700	16,200	22,800	26,000	1:7.6	.....
2	1	520	2,100	3,440	5,000	7,100	1:13.6	.....
4	1	740	1,900	2,860	3,920	5,200	1:7.0	.....
10	2	500	2,300	2,480	3,720	.....	.....	1:7.4
4	2	1,120	1,910	2,380	.....	.....	.....	.....
10	3	2,400	4,150	9,300	.....	.....	.....	.....

EXPERIMENT NO. 2—CONTROL, LAGOON.

Plated.		Count After.					Ratio.	
Time.	Day.	48 Hours.	72 Hours.	96 Hours.	120 Hours.	144 Hours.	2:6 Days.	2:5 Days.
10	1	180	180	268	Liquid	.....	.....	.....
12	1	124	138	226	230	238	1:1.9	.....
2	1	136	116	140	176	188	1:1.4	.....
4	1	210	158	240	316	340	1:1.6	.....
10	2	6,600	7,900	10,800	12,300	.....	.....	1:1.8
4	2	25,200	26,400	28 400	.....	.....	.....	.....
10	3	640,000	896,000	960,000	.....	.....	.....	.....

Original sample, untreated, 22,800.

EXPERIMENT NO. 3—CONTROL, LABORATORY TAP WATER.

Plated.		Count After.					Ratio.	
Time.	Day.	48 Hours.	72 Hours.	96 Hours.	120 Hours.	144 Hours.	2:6 Days.	2:5 Days.
11	1	121	184	285	Liquid	.....	.....	.....
12	1	115	171	223	380	392	1:3.4	.....
2	1	109	152	221	362	375	1:3.4	.....
4	1	121	175	251	410	415	1:3.4	.....
10	2	6,200	8,500	8,800	8,900	.....	.....	1:1.4
10	3	425,000	650,000	670,000	.....	.....	2:4 days	1:1.5

Available Cl. equals 0.1 p.p.m., Treatment in Laboratory.

Plated.		Count After.					Ratio.		
Time.	Day.	48 Hours.	72 Hours.	96 Hours.	120 Hours.	144 Hours.	2:6 Days.	2:5 Days.	2:4 Days.
11	1	520	940	1,350	2,360	2,780	1:5.3	.....	.....
12	1	390	770	1,080	2,040	2,320	1:5.8	.....	.....
2	1	187	260	690	1,840	2,080	1:16.4	.....	.....
4	1	91	130	280	760	840	1:9.2	1:22	.....
10	2	42	120	670	920	.....	.....	.....	1:10.9
10	3	320	1,210	3,500	.....	.....	.....	.....	1:2.9
10	4	8,700	14,200	26,000	.....	.....	.....	.....	.....

Available Cl. equals 1.0 p.p.m., Treatment in Laboratory.

Plated.		Count After.					Ratio.		
Time.	Day.	48 Hours.	72 Hours.	96 Hours.	120 Hours.	144 Hours.	2:6 Days.	2:5 Days.	2:4 Days.
11	1	2	5	7	6	10	.....	.....	.....
12	1	1	1	2	2	4	.....	.....	.....
2	1	0	0	0	2	2	.....	.....	.....
4	1	1	2	2	6	6	.....	.....	.....
10	2	0	0	0	1	.....	.....	.....	.....
10	3	0	0	0	.....	.....	.....	.....	.....
10	4	5	13	16	.....	.....	.....	.....	.....
10	5	79	166	.....	.....	.....	.....	.....	.....

Available Cl. equals 4.0 p.p.m., Treatment in Laboratory.

Plated.		Count After.					Ratio.	
Time.	Day.	48 Hours.	72 Hours.	96 Hours.	120 Hours.	144 Hours.	2:6 Days.	2:5 Days.
11	1	1	1	1	4	5	.....	.....
12	1	0	0	1	3	3	.....	.....
2	1	0	1	1	Liquid	.....	.....	.....
4	1	0	0	0	0	0	.....	.....
10	2	0	1	1	2	4	.....	.....
10	2	0	0	0	2	.....	.....	.....
10	2	0	0	1	.....	.....	.....	.....
			Original	Sample,	untreated			
10	1	1,620	2,230	2,860	3,620	3,840	1:2.3	.....

From these results it appears that chlorine does not entirely kill all species of bacterial forms, some are merely temporarily disabled, and may be revived by placing in a suitable media. As the enumeration of bacteria is dependent on the reproductive ability of the organisms, it is obvious that any substance that retards this process sufficiently to prevent the formation of visible colonies within the period of incubation, would be regarded as a germicide, and for practical purposes this is sufficient. Chlorine in small quantities is only slightly antigenetic, and moderate doses must be applied before any distinct bactericidal action is observed.

I am, sir,

Yours faithfully,
JOSEPH RACE.

SAMPLES TAKEN FROM TORONTO BAY.

DATE, JUNE 29, 1911.

Sampling Point.	Depth.	Temp. Fahr.	Bacteria per c.c.m.	Bacillus Coli.						Ammonia			Oxygen absorbed in 4 hrs. at 27° c.	Chlorine
				Presumptive			Confirmatory							
				1 c.c.	0.1 c.c.	0.01 c.c.	1 c.c.	0.1 c.c.	0.01 c.c.	Free	Alb.	Total		
Off Yonge St. Wharf	4 ft.	62	300,000	+	+	+	+	+	+	.176	.280	.456	.89	9.1
300 Yards from Yonge St. Wharf	4 ft.	62	328,000	+	+	+	+	+	+	.184	.214	.398	.88	8.6
600 " " " "	4 ft.	62	126,000	+	+	+	+	+	+	.144	.204	.348	.77	9.1
900 " " " "	4 ft.	62	290,000	+	+	+	+	+	+	.216	.244	.460	.85	9.6
Hanlan's Point	4 ft.	62	156,000	+	+	+	+	+	+	.076	.176	.252	.81	8.6

DATE, JULY 6, 1911.

Sampling Point.	Depth.	Temp. Fahr.	Bacteria per c.c.m.	Bacillus Coli.						Ammonia			Oxygen absorbed in 4 hrs. at 27° c.	Chlorine
				Presumptive			Confirmatory							
				0.01 c.c.	0.001 c.c.	0.0001 c.c.	0.01 c.c.	0.001 c.c.	0.0001 c.c.	Free	Alb.	Total		
Off Simcoe St. Wharf	4 ft.	66	3,220,000	+	+	+	+	+	+	.416	.528	.944	3.60	28.32
200 yards from Simcoe St	4 ft.	66	120,000	+	+	—	+	+	—	.092	.208	.300	0.94	10.08
400 " "	4 ft.	67	270,000	+	+	—	+	+	—	.108	.216	.324	.86	13.40
600 " "	4 ft.	68	218,000	+	—	—	+	—	—	.096	.210	.306	.88	10.08
Hanlan's Point	4 ft.	69	114,000	+	—	—	+	—	—	.064	.156	.220	.74	9.10

DATE, JULY 12, 1911.

Sampling Point.	Depth.	Temp. Fahr.	Bacteria per c c.m.	Bacillus Coli.						Ammonia			Oxygen absorbed	Chlorine
				Presumptive			Confirmatory							
				.01 c.c.	.001 c.c.	.0001 c.c.	.01 c.c.	.001 c.c.	.0001 c.c.	Free	Alb.	Total		
Off Brock St. Wharf	4 ft.	70	756,000	+	+	—	+	+	—	.448	.564	1.012	2.51	20.1
200 yards from Brock St. Wharf	4 ft.	68	410,000	+	—	—	+	—	—	.176	.204	.380	.91	10.1
400 " " "	4 ft.		Sample	bro	ken									
600 " " "	4 ft.	66	180,000	+	+	+	+	+	—	.184	.240	.424	.69	9.6
Hanlan's Point	4 ft.	66	17,000	+	—	—	+	—	—	.080	.176	.256	.99	9.1

DATE, AUGUST 3rd, 1911.

Sampling Point.	Depth.	Temp. Fahr.	Bacteria per c.c.m.	Bacillus Coli.						Ammonia			Oxygen absorbed	Chlorine
				Presumptive			Confirmatory							
				.01 c.c.	.001 c.c.	.0001 c.c.	.01 c.c.	.001 c.c.	.0001 c.c.	Free	Alb.	Total		
Off Yonge St. Wharf	4 ft.	65	520,000	+	+	+	+	+	+	.256	.304	.560	1.15	10.56
300 yards from Yonge St. Wharf	4 ft.	62	340,000	+	+	—	+	+	—	.168	.176	.344	.93	10.08
600 " " "	4 ft.	62	27,000	+	—	—	+	—	—	.096	.128	.224	.62	8.16
900 " " "	4 ft.	63	41,000	+	—	—	+	—	—	.184	.224	.408	1.09	10.08
Hanlan's Point	4 ft.	64	45,000	+	—	—	+	—	—	.128	.160	.288	1.01	10.08

All chemical results are expressed in parts per million.

Sewage Treatment with Chlorine (as Bleach) One Hour's Contact

Sewer.	Total Bacteria (Gelatine).				B. Coli.			
	Before Treatment.	After Treatment with 2.5 parts per million.	5.0	10.0	Before Treatment.	After Treatment with 2.5 parts per million.	5.0	10.0
Sumach	8,240,000	.....	2,400	22	101,000	.....	...	...
Parliament	5,800,000	96,800	11,600	66	610,000	11	1	0
Church	62,400,000	24,960	1,120	120	66,000	4	0	0
Berkeley & Queen	8,880,000	24,800	9,280	10	132,000	970	5	0
Ontario & Queen (L. Level)....	5,920,000	15,480	1,600	248	71,000	106	0	0
Sherbourne and Front (L.Level)	6,520,000	12,400	2,600	640	86,000	45	1	0
George & Queen.	56,200,000	236,000	13,600	648	136,000	51	0	0
Jarvis & Queen.	7,820,000	928,000	12,080	2,248	202,000	73	1	7
Ontario and Duchess	1,890,000	.....	38	37	3,000		3	0
York and Richmond	5,920,000	139,200	8,800	8,512	12,000	1	0	0
Victoria & Queen	3,275,000	43,200	24,000	1,216	80,000	1	0	0
Bay & Richmond	31,485,000	240,800	37,120	4,864	23,000	259	1	0
Simcoe	9,200,000	168,000	20,400	6,400	27,000	46	7	0
John Street	7,040,000	91,200	11,760	380	14,000	6	0	0
Peter	15,720,000	24,800	5,600	4,500	92,000	72	5	0
Spadina	6,920,000	21,400	8,600	1,220	138,000	114	17	1
Bathurst	18,240,000	328,000	39,680	4,240	20,000	59	4	0
Spadina & Front (Low Level)...	4,960,000	82,000	35,200	16,960	181,000	640	75	8
Garrison Creek..	105,600,000	214,400	208,000	14,400	350,000	2,400	568	33
Belwoods Ave. ..	8,880,000	122,400	54,400	2,880	320,000	1,620	90	1
Average	19,045,500	156,323	25,393	3,465	133,200	360	38	2.5

Sewage Treatment with Chlorine (as Bleach) Four Hours' Contact.

Sewer.	Total Bacteria (Gelatine).				B. Coli.			
	Before Treatment.	After Treatment with 2.5 parts per million.	5.0	10.0	Before Treatment.	After Treatment with 2.5 parts per million.	5.0	10.0
George & Queen	56,200,000	184,000	1,840	47	.....	.....	...	...
Jarvis & Queen..	7.820,000	832,000	360	325	.....	.....	...	...
Ontario and Duchess	1,890,000	.....	37	27	3,000	4	0	3
York & Richmond	5,920,000	16,160	5,600	832	12,000	0	0	0
Victoria & Queen	3,275,000	2,600	66	16	80,000	1	0	0
Bay & Richmond	31,485,000	7,500	440	22	23,000	54	0	0
Simcoe	9,200,000	54,400	1,810	53	27,000	4	0	0
John Street	7,040,000	24,000	1,600	210	14,000	5	0	0
Peter Street	15,720,000	12,400	2,100	1,080	92,000	14	0	0
Spadina	6,920,000	17,200	2,800	880	138,000	11	0	0
Bathurst	18,240,000	136,800	5,200	45	20,000	34	3	1
Spadina & Front (Low Level)..	4,960,000	35,200	12,080	800	181,000	284	0	0
Garrison Creek..	105,600,000	230,000	64,800	8,640	350,000	1,620	155	1
Belwood Avenue	8,880,000	23,200	630	79	320,000	20	0	0
Average	20,225,000	121,189	7,097	932	115,000	171	13	0.5

Sewer:	*Date:*	*Time:*
Sumach.	October 28th, 1911.	8 a.m.

Ammoniacal Nitrogen .....21.0 parts per million.
Albuminoid Nitrogen .....10.5 " " "
Oxygen absorbed from Permanganate at 80° F
In 5 minutes .....18.2 " " "
In 15 minutes .....21.2 " " "
In 4 hours .....50.9 " " "
Chlorine .....53.7 " " "
Dissolved Oxygen ..... 4.88 " " "
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.....+74.46 " " "
Reaction to Phenol Phthalein .....Just acid.

Bacteria per ccm. on Gelatine 3 days at 20° C.		8,240,000
" " " Agar, 24 hours at 37° C.		440,000
" " " Litmus Lactose Agar—Red Colonies		101,000
Other		22,000
Total		123,000

Sewer:	*Date:*	*Time:*
Parliament.	October 31st, 1911.	8 a.m.

Ammoniacal Nitrogen	17.00	parts per million.
Albuminoid Nitrogen	6.50	" " "
Oxygen absorbed from Permanganate at 80° F.		
In 5 minutes	13.1	" " "
In 15 minutes	18.1	" " "
In 4 hours	45.3	" " "
Chlorine	56.6	" " "
Dissolved Oxygen	4.62	" " "
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	57.44	" " "
Reaction to Phenol Phthalein	Just acid.	

Solids.	Total.	Mineral.	Organic.
Dissolved solids	433	214	219
Suspended solids	80	51	29
Total solids	513	265	248

Bacteria per ccm. on Gelatine 3 days at 20° C.		5,800,000
" " " Agar 24 hours at 37° C.		
" " " Litmus Lactose Agar—Red Colonies		610,000
Other		1,270,000
Total		1,880,000

Sewer:	*Date:*	*Time:*
Church	November 1st, 1911.	8 a.m.

Ammoniacal Nitrogen	18.0	parts per million.
Albuminoid Nitrogen	6.5	" " "
Oxygen absorbed from Permanganate at 80° F.		
In 5 minutes	11.4	" " "
In 15 minutes	14.2	" " "
In 4 hours	68.7	" " "
Chlorine	59.5	" " "

Sewer:	*Date:*	*Time:*
Church.	November 1st, 1911.	8 a.m.

Dissolved Oxygen ..... 2.35 parts per million.
Dissolved Oxygen absorbed from saturated tap-water
in 24 hours at 70° F.....+66.68 " " "
Reaction to Phenol Phthalein .....Just acid.

Solids.	Total.	Mineral.	Organic.
Dissolved solids	453	211	242
Suspended solids	117	78	39
Total solids	570	289	281

Bacteria per ccm. on Gelatine 3 days at 20° C.....62,400,000
" " " Agar 24 hrs. at 37° C..... 135,000
" " " Litmus Lactose Agar—Red colonies..... 66,000
Others 28,000
Total..... 94,000

Sewer:	*Date:*	*Time:*
Cor. Queen & Berkeley.	November 2nd. 1911.	8 a.m.

Ammoniacal Nitrogen .....22.0 parts per million.
Albuminoid Nitrogen ..... 7.5 " " "
Oxygen absorbed from Permanganate at 80° F.
In 5 minutes .....11.8 " " "
In 15 minutes .....17.9 " " "
In 4 hours .....44.4 " " "
Chlorine .....57.6 " " "
Dissolved Oxygen ..... 2.53 " " "
Dissolved Oxygen absorbed from saturated tap-water
in 24 hours at 70° F.....50.92 " " "
Reaction to Phenol Phthalein .....Just acid.

Solids.	Total.	Mineral.	Organic.
Dissolved solids	2,345	1,924	421
Suspended solids	257	178	79
Total solids	2,602	2,102	500

Bacteria per ccm. on Gelatine 3 days at 20° C.	8,880,000	
" " " Agar 24 hrs. at 37° C.	2,825,000	
" " " Litmus Lactose Agar—Red colonies		132,000
Total		22,000
Total		154,000

Sewer:	*Date:*	*Time:*
Cor. Ontario & King (Low Level.)	November 3rd, 1911.	8 a.m.

Ammoniacal Nitrogen	23.5	parts	per	million.
Albuminoid Nitrogen	9.5	"	"	"
Oxygen absorbed from Permanganate at 80° F.				
In 5 minutes	13.5	"	"	"
In 15 minutes	24.8	"	"	"
In 4 hours	58.1	"	"	"
Chlorine	67.2	"	"	"
Dissolved Oxygen	2.34	"	"	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	+73.32	"	"	"
Reaction to Phenol Phthalein	Just acid.			

Solids.	Total.	Mineral.	Organic.
Dissolved solids	536	290	246
Suspended solids	250	55	195
Total solids	786	345	441

Bacteria per ccm. on Gelatine 3 days at 20° C.	5,920,000	
" " " Agar 24 hrs. at 37° C.	736,000	
" " " Litmus Lactose Agar—Red colonies		71,000
Others		49,000
Total		120,000

Sewer:	*Date:*	*Time:*
Cor. Sherbourne & Front. (Low Level.)	November 4th, 1911.	8 a.m.

Ammoniacal Nitrogen	15.0	parts	per	million.
Albuminoid Nitrogen	5.5	"	"	"

Sewer:	*Date:*	*Time:*
Cor. Sherbourne & Front. (Low Level.)	November 4th, 1911.	8 a.m.

Oxygen absorbed from Permanganate at 80° F.

In 5 minutes	10.4	parts per	million.
In 15 minutes	16.8	" "	"
In 4 hours	41.6	" "	"
Chlorine	67.2	" "	"
Dissolved Oxygen	2.54	" "	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	+74.99	" "	"
Reaction to Phenol Phthalein	Just acid.		

Solids.	Total.	Mineral.	Organic.
Dissolved solids	542	350	192
Suspended solids	239	136	103
Total solids	781	486	295

Bacteria per ccm. on Gelatine 3 days at 20° C.	6,520,000	
" " " Agar 24 hrs. at 37° C.		
" " " Litmus Lactose Agar—Red Colonies		86,000
Others		57,000
Total		143,000

Sewer:	*Date:*	*Time:*
Cor. George & Queen.	November 6th, 1911.	8 a.m.

Ammoniacal Nitrogen	20.0	parts per	million.
Albuminoid Nitrogen	6.5	" "	"
Oxygen absorbed from Permanganate at 80° F			
In 5 minutes	14.7	" "	"
In 15 minutes	28.3	" "	"
In 4 hours	84.2	" "	"
Chlorine	65.3	" "	"
Dissolved Oxygen	2.88	" "	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	+108.58	" "	"
Reaction to Phenol Phthalein	Just acid.		

Solids.	Total.	Mineral.	Organic.
Dissolved solids	770	357	413
Suspended solids	193	63	40
Total solids	873	420	453

Bacteria per ccm. on Gelatine 3 days at 20° C.	56,200,000	
" " " Agar 24 hrs. at 37° C.	817,000	
" " " Litmus Lactose Agar—Red Colonies		136,000
Others		208,000
Total		344,000

Sewer:	*Date:*	*Time:*
Jarvis.	November 7th, 1911.	8 a.m.

Ammoniacal Nitrogen	18.5	parts per	million.
Albuminoid Nitrogen	6.0	" "	"
Oxygen absorbed from Permanganate at 80° F.			
In 5 minutes	12.1	" "	"
In 15 minutes	22.7	" "	"
In 4 hours	55.4	" "	"
Chlorine	52.6	" "	"
Dissolved Oxygen	2.70	" "	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	88.60	" "	"
Reaction to Phenol Phthalein	Just acid.		

Solids.	Total.	Mineral.	Organic.
Dissolved solids	471	290	181
Suspended solids	148	94	54
Total solids	619	384	235

Bacteria per ccm. on Gelatine 3 days at 20° C.	7,820,000	
" " " Agar 24 hrs. at 37° C.	450,000	
" " " Litmus Lactose Agar—Red Colonies		202,000
Others		109,000
Total		311,000

Sewer:	*Date:*	*Time:*
Cor. Ontario & Duchess.	November 8th, 1911.	8 a.m.

Ammoniacal Nitrogen	11.0	parts	per	million.
Albuminoid Nitrogen	3.2	"	"	"
Oxygen absorbed from Permanganate at 80° F.				
In 5 minutes	115.6	"	"	"
In 15 minutes	180.9	"	"	"
In 4 hours	241.4	"	"	"
Chlorine	40.6	"	"	"
Dissolved Oxygen	Nil.			
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	45.29	"	"	"
Reaction to Phenol Phthalein	Just acid.			

Solids.	Total.	Mineral.	Organic.
Dissolved solids	815	576	239
Suspended solids	329	264	65
Total solids	1,114	840	304

Bacteria per ccm. on Gelatine 3 days at 20° C.	1,890,000	
" " " Agar 24 hrs. at 37° C.	100,000	
" " " Litmus Lactose Agar—Red Colonies		3,000
Others		5,000
Total		8,000

The sample was dark colored, and had a distinct odor of tar constituents.

Sewer:	*Date:*	*Time:*
Cor. York & Richmond.	November 13th, 1911.	8 a.m.

Ammoniacal Nitrogen	11.5	parts	per	million.
Albuminoid Nitrogen	10.5	"	"	"
Oxygen absorbed from Permanganate at 80° F.				
In 5 minutes	7.1	"	"	"
In 15 minutes	13.4	"	"	"
In 4 hours	19.8	"	"	"
Chlorine	25.0	"	"	"
Dissolved Oxygen	7.47	"	"	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	50.71	"	"	"
Reaction to Phenol Phthalein	Just acid.			

Solids.	Total.	Mineral.	Organic.
Dissolved solids	370	218	152
Suspended solids	250	161	89
Total solids	620	379	241

Bacteria per ccm. on Gelatine 3 days at 20° C. 5,920,000
" " " Agar 24 hrs. at 37° C. 210,000
" " " Litmus Lactose Agar—Red Colonies 12,000
Others 42,000
Total 54,000

Heavy rainfall during previous day.

Sewer: Cor. Victoria & Queen. *Date:* November 14th, 1911. *Time:* 8 a.m.

Ammoniacal Nitrogen ..... 2.60 parts per million.
Albuminoid Nitrogen ..... 5.70 " " "
Oxygen absorbed from Permanganate at 80° F.
In 5 minutes ..... 7.1 " " "
In 15 minutes ..... 12.5 " " "
In 4 hours ..... 33.5 " " "
Chlorine ..... 24.0 " " "
Dissolved Oxygen ..... 5.39 " " "
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F. ..... 33.44 " " "
Reaction to Phenol Phthalein ..... Just acid.

Solids.	Total.	Mineral.	Organic.
Dissolved solids	258	150	108
Suspended solids	49	21	28
Total solids	307	151	136

Bacteria per ccm. on Gelatine 3 days at 20° C. 3,275,000
" " " Agar 24 hrs. at 37° C. 291,000
" " " Litmus Lactose Agar—Red Colonies 89,000
Others 112,000
Total 192,000

Sewer:	*Date:*	*Time:*
Cor. Bay & Richmond.	November 15th, 1911.	8 a.m.

Ammoniacal Nitrogen	11.5	parts	per	million.
Albuminoid Nitrogen	8.3	"	"	"
Oxygen absorbed from Permanganate at 80° F.				
In 5 minutes	7.5	"	"	"
In 15 minutes	14.4	"	"	"
In 4 hours	60.7	"	"	"
Chlorine	94.3	"	"	"
Dissolved Oxygen	5.43	"	"	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	45.02	"	"	"
Reaction to Phenol Phthalein	Acid.			

Solids.	Total.	Mineral.	Organic.
Dissolved solids	549	368	181
Suspended solids	141	29	117
Total solids	695	397	298

Bacteria per ccm. on Gelatine 3 days at 20° C.	31,485,000	
" " " Agar 24 hrs. at 37° C.	480,000	
" " " Litmus Lactose Agar—Red Colonies		23,000
Others		29,000
Total		52,000

Sewer:	*Date:*	*Time:*
Simcoe.	November 16th, 1911.	8 a.m.

Ammoniacal Nitrogen	8.0	parts	per	million.
Albuminoid Nitrogen	3.5	"	"	"
Oxygen absorbed from Permanganate at 80° F.				
In 5 minutes	8.2	"	"	"
In 15 minutes	17.5	"	"	"
In 4 hours	58.3	"	"	"
Chlorine	77.4	"	"	"
Dissolved Oxygen	4.79	"	"	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	50.69	"	"	"
Reaction to Phenol Phthalein	Just Alkaline.			

Solids.	Total.	Mineral.	Organic.
Dissolved solids	544	335	209
Suspended solids	203	67	136
Total solids	747	402	345

Bacteria per ccm. on Gelatine 3 days at 20° C.	9,200,000	
" " " Agar 24 hrs. at 37° C.	496,000	
" " " Litmus Lactose Agar—Red Colonies		27,000
Others		68,000
Total		95,000

Sewer:	*Date:*	*Time:*
John Street.	November 17th, 1911.	8 a.m.

Ammoniacal Nitrogen	22.7	parts per million.
Albuminoid Nitrogen	13.5	" " "
Oxygen absorbed from Permanganate at 80° F.		
In 5 minutes	8.8	" " "
In 15 minutes	17.4	" " "
In 4 hours	58.2	" " "
Chlorine	107.4	" " "
Dissolved Oxygen	3.94	" " "
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	51.10	" " "
Reaction to Phenol Phthalein	Acid.	

Solids.	Total.	Mineral.	Organic.
Dissolved solids	904	570	334
Suspended solids	338	162	176
Total solids	1,242	732	510

Bacteria per ccm. on Gelatine 3 days at 20° C.	7,040,000	
" " " Agar 24 hrs. at 37° C.	730,000	
" " " Litmus Lactose Agar—Red Colonies		14,000
Others		34,000
Total		48,000

Sewer:	*Date:*	*Time:*
Peter Street.	November 18th, 1911.	8 a.m.

Ammoniacal Nitrogen	22.5	parts	per	million.
Albuminoid Nitrogen	11.0	"	"	"
Oxygen absorbed from Permanganate at 80° F.				
In 5 minutes	9.5	"	"	"
In 15 minutes	21.7	"	"	"
In 4 hours	68.9	"	"	"
Chlorine	93.2	"	"	"
Dissolved Oxygen	2.78	"	"	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	66.53	"	"	"
Reaction to Phenol Phthalein	Just acid.			

Solids.	Total.	Mineral.	Organic.
Dissolved solids	672	449	223
Suspended solids	314	219	95
Total solids	986	668	318

Bacteria per ccm. on Gelatine 3 days at 20° C.	15,720,000	
" " " Agar 24 hrs. at 37° C.	880,000	
" " " Litmus Lactose Agar—Red Colonies		92,000
Others		114,000
Total		206,000

Sewer:	*Date:*	*Time:*
Spadina.	November 20th, 1911.	8 a.m.

Ammoniacal Nitrogen	18.0	parts	per	million.
Albuminoid Nitrogen	8.5	"	"	"
Oxygen absorbed from Permanganate at 80° F.				
In 5 minutes	11.4	"	"	"
In 15 minutes	25.6	"	"	"
In 4 hours	73.2	"	"	"
Chlorine	114.8	"	"	"
Dissolved Oxygen	3.51	"	"	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	72.5	"	"	"
Reaction to Phenol Phthalein	Just acid.			

Solids.	Total.	Mineral.	Organic.
Dissolved solids	1,005	732	273
Suspended solids	315	201	114
Total solids	1,320	933	387

Bacteria per ccm. on Gelatine 3 days at 20° C.	6,920,000	
" " " Agar 24 hrs. at 37° C.	740,000	
" " " Litmus Lactose Agar—Red Colonies		138,000
Others		171,000
Total		309,000

Sewer:	*Date:*	*Time:*
Bathurst.	November 21st, 1911.	8 a.m.

Ammoniacal Nitrogen	15.5 parts per million.
Albuminoid Nitrogen	7.0 " " "
Oxygen absorbed from Permanganate at 80° F.	
In 5 minutes	8.5 " " "
In 15 minutes	19.4 " " "
In 4 hours	55.4 " " "
Chlorine	68.5 " " "
Dissolved Oxygen	4.37 " " "
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	63.97 " " "
Reaction to Phenol Phthalein	Alkaline.

Solids.	Total.	Mineral.	Organic.
Dissolved solids	535	341	194
Suspended solids	134	45	89
Total solids	669	386	283

Bacteria per ccm. on Gelatine 3 days at 20° C.	18,240,000	
" " " Agar 24 hours at 37° C.	456,000	
" " " Litmus Lactose Agar—Red colonies		20,000
Others		56,000
Total		76,000

Sewer:	*Date:*	*Time:*
Corner Spadina and Front. (Low level.)	Nov. 22nd, 1911.	8 a.m.

Ammoniacal Nitrogen	11.0	parts	per	million.
Albuminoid Nitrogen	4.5	"	"	"
Oxygen absorbed from Permanganate at 80° F.				
In 5 minutes	8.8	"	"	"
In 15 minutes	19.4	"	"	"
In 4 hours	61.7	"	"	"
Chlorine	73.2	"	"	"
Dissolved Oxygen	4.19	"	"	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	83.82	"	"	"
Reaction to Phenol Phthalein	Just acid.			

Solids.	Total.	Mineral.	Organic.
Dissolved solids	456	263	193
Suspended solids	180	53	127
Total solids	636	316	320

Bacterial per ccm. on Gelatine 3 days at 20° C.	4,960,000	
" " " Agar 24 hours at 37° C.	1,010,000	
" " " Litmus Lactose Agar—Red colonies		181,000
Others		59,000
Total		240,000

Sewers:	*Date:*	*Time:*
Garrison Creek.	November 28th, 1911.	8 a.m.

Ammoniacal Nitrogen	25.0	parts	per	million.
Albuminoid Nitrogen	14.5	"	"	"
Oxygen absorbed from Permanganate at 80° F.				
In 5 minutes	28.6	"	"	"
In 15 minutes	42.5	"	"	"
In 4 hours	83.2	"	"	"
Chlorine	117.2	"	"	"
Dissolved Oxygen	1.32	"	"	"
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F.	84.34	"	"	"
Reaction to Phenol Phthalein	Just acid.			

Solids.	Total.	Mineral.	Organic.
Dissolved solids	628	432	196
Suspended solids	346	150	196
Total solids	974	582	392

Bacteria per ccm. on Gelatine 3 days at 20° C. 105,600,000
" " " Agar 24 hours at 37° C. 3,920,000
" " " Litmus Lactose Agar—Red colonies 350,000
Others 440,000
Total 790,000

Sewer: Belwoods Avenue. *Date:* November 29th, 1911. *Time:* 8 a.m.

Ammoniacal Nitrogen ..... 13.4 parts per million.
Albuminoid Nitrogen ..... 6.5 " " "
Oxygen absorbed from Permanganate at 80° F.
In 5 minutes ..... 6.9 " " "
In 15 minutes ..... 15.6 " " "
In 4 hours ..... 57.8 " " "
Chlorine ..... 52.4 " " "
Dissolved Oxygen ..... 4.71 " " "
Dissolved Oxygen absorbed from saturated tap-water in 24 hours at 70° F. ..... 50.29 " " "
Reaction to Phenol Phthalein ..... Just acid.

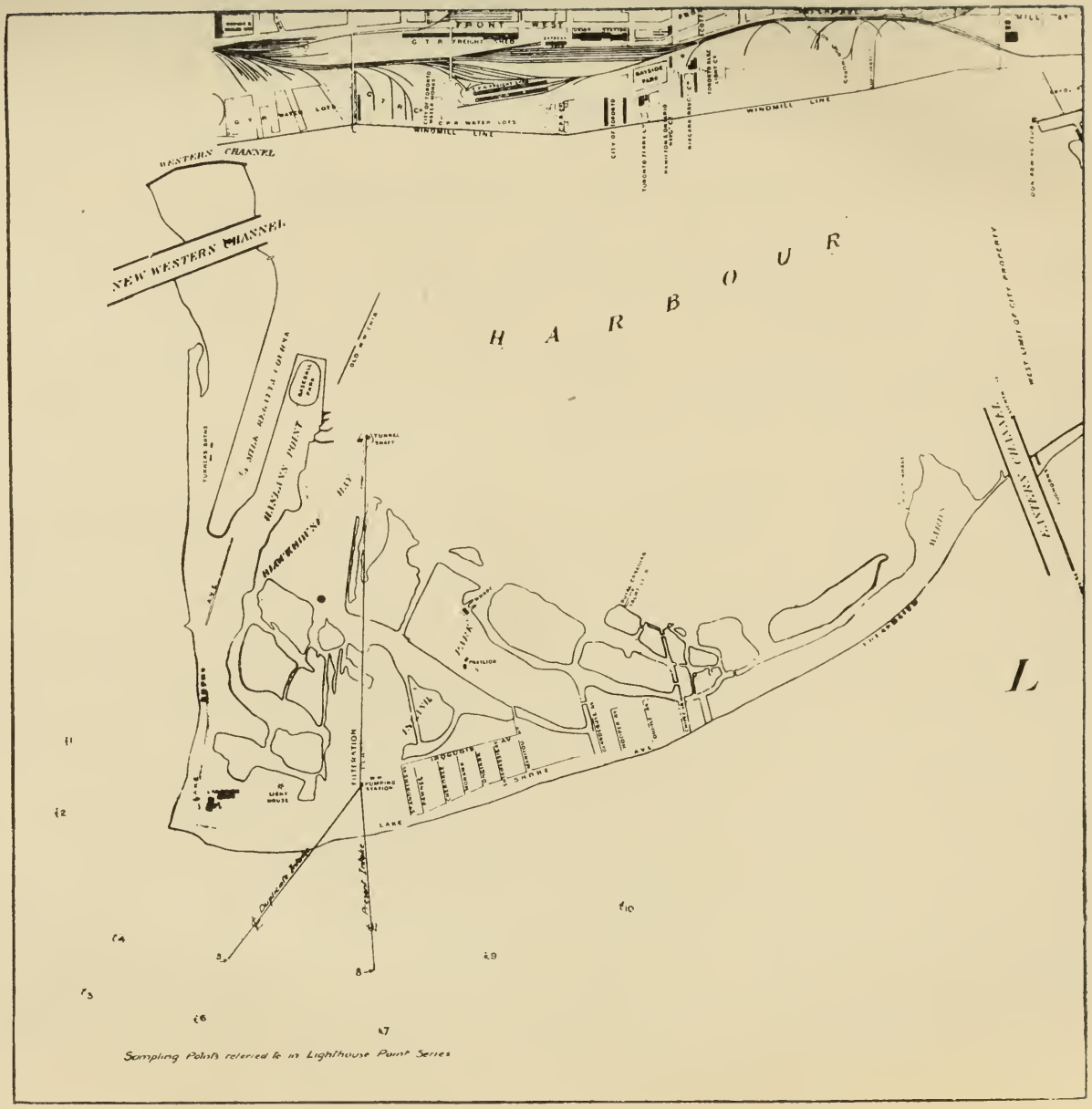
Solids.	Total.	Mineral.	Organic.
Dissolved solids	462	288	174
Suspended solids	225	134	91
Total solids	687	422	265

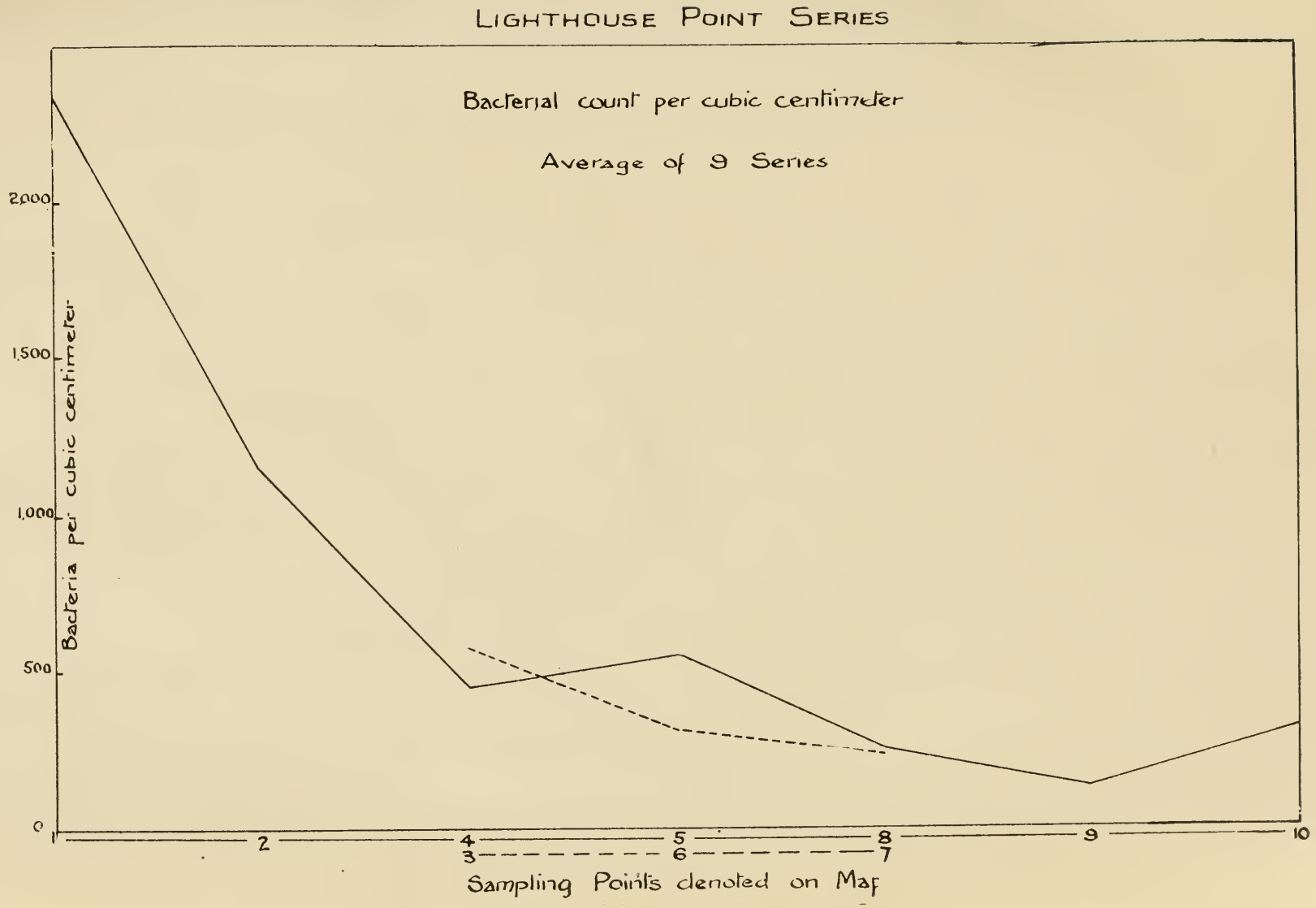
Bacteria per ccm. on Gelatine 3 days at 20° C. 8,880,000
" " " Agar 24 hours at 37° C. 740,000
" " " Litmus Lactose Agar—Red colonies 320,000
Others 200,000
Total 520,000

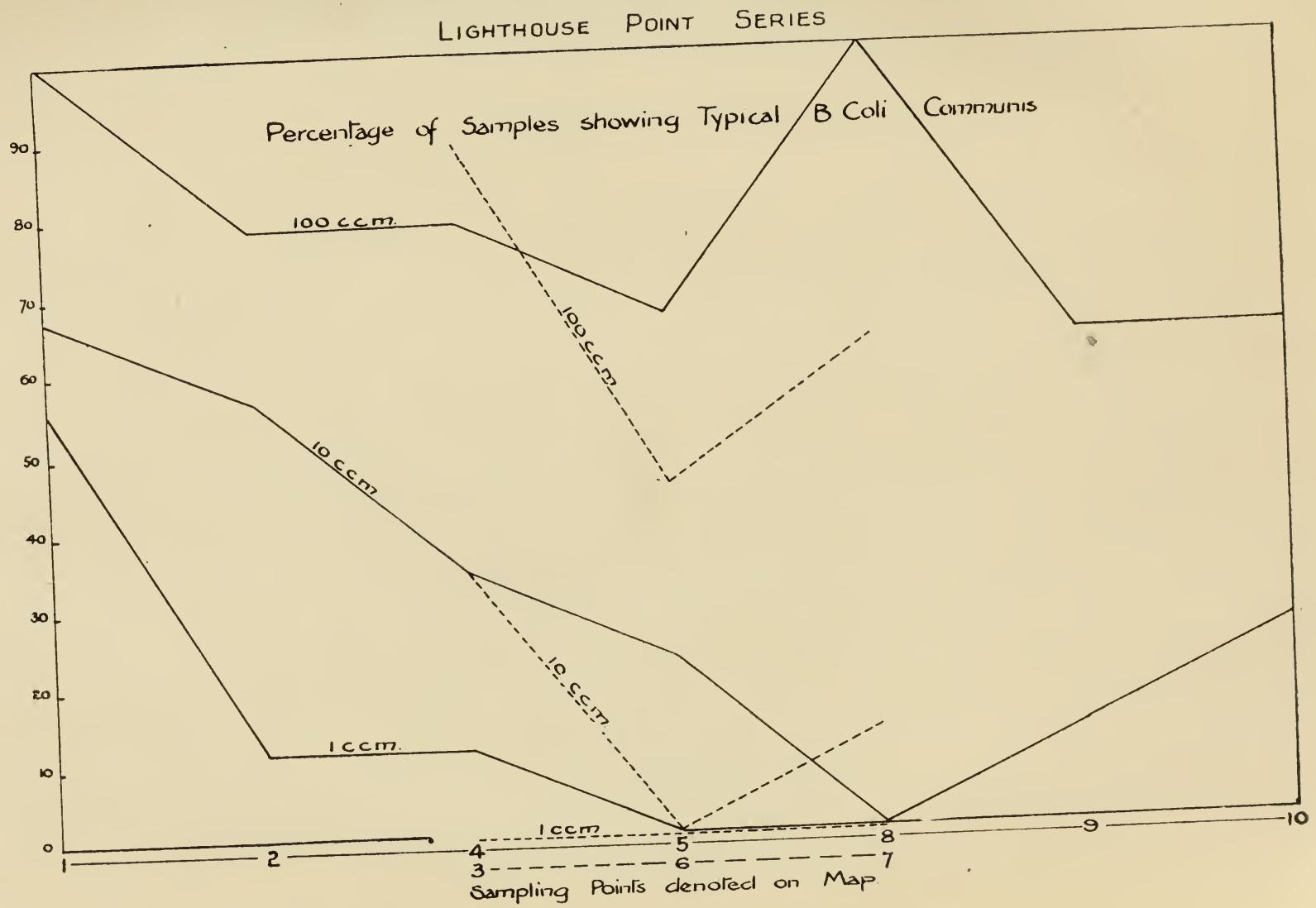
Summary of Chemical Analyses.

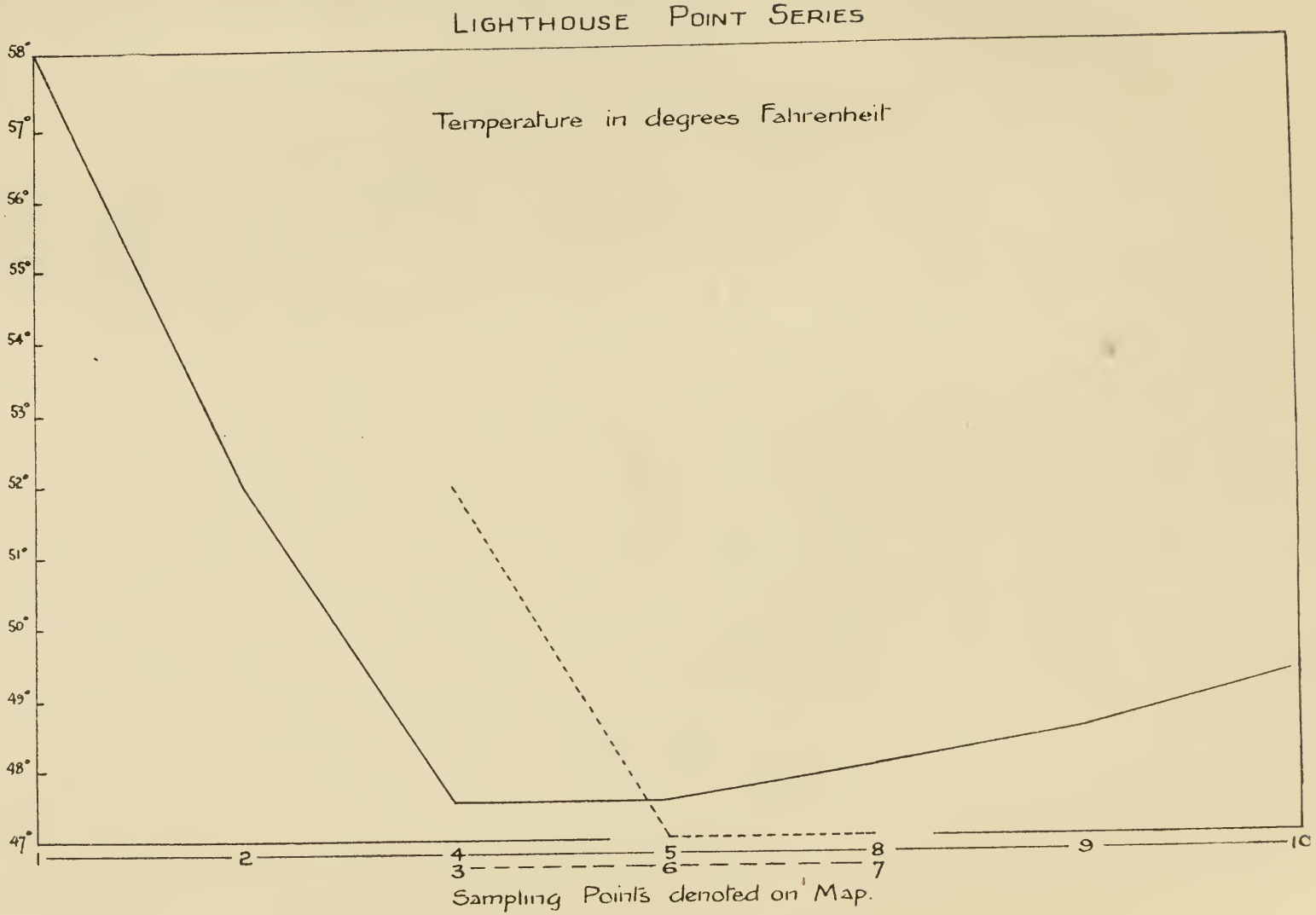
Sewages.

Free Ammonia	16.1	parts	per	million.
Albuminoid Ammonia	7.6	"	"	"
Chlorine	69.1	"	"	"
Oxygen absorbed from Permanganate in 4 hours at 27° C. (80° F.)	66.8	"	"	"
Dissolved Oxygen absorbed from an excess of tap-water in 24 hours at 70° F.	64.12	"	"	"
Total solids	856	"	"	"
Suspended solids	212	"	"	"
Volatile suspended solids	93	"	"	"


FRONT
WEST
G.T.R. FREIGHT SHED
WINDMILL LINE
WESTERN CHANNEL
NEW WESTERN CHANNEL
HARBOUR
LA MILIA BEACH CLUB
HANLAN'S POINT
BLACKHORSE BAY
TUNNEL SHAFT
PARK
PAVILION
PAVILION AV.
ISOLATION
LAKE
LIGHT HOUSE
PUMPING STATION
EASTERN CHANNEL
WEST LIMIT OF CITY PROPERTY
Sampling Points referred to as Lighthouse Point Series


LIGHTHOUSE POINT SERIES
Bacterial count per cubic centimeter
Average of 9 Series
2000
1,500
1,000
500
0
Bacteria per cubic centimeter
1
2
4
5
8
9
10
3
6
7
Sampling Points denoted on Map


LIGHTHOUSE POINT SERIES
Percentage of Samples showing Typical B Coli Communis
90
80
70
60
50
40
30
20
10
0
100 c.c.m.
10 c.c.m.
1 c.c.m.
1 c.c.m.
10 c.c.m.
100 c.c.m.
1
2
3
4
5
6
7
8
9
10
Sampling Points denoted on Map


LIGHTHOUSE POINT SERIES
Temperature in degrees Fahrenheit
58°
57°
56°
55°
54°
53°
52°
51°
50°
49°
48°
47°
1
2
4
3
5
6
8
7
9
10
Sampling Points denoted on Map.

DATE, MAY 23RD, 1911.

SERIES: LIGHTHOUSE POINT.

Direction. Velocity. Lake Currents.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	51	5,600	+	+	—	+	+	—	.004	.044	.78	7.5	.06	L4
2	42	1,900	+	+	+	+	+	+	.004	.058	.58	7.5	.10	"
3	56	106	—	—	—	—	—	—	.004	.060	.55	7.2	.06	"
4	43	910	+	+	+	+	+	+	.004	.058	.66	7.2	.10	"
5	44	216	+	—	—	+	—	—	.004	.054	.56	7.2	.02	"
6	46	258	—	—	—	—	—	—	.036	.064	.71	7.2	.08	"
7	44	115	—	—	—	—	—	—	.004	.054	.61	7.2	.10	"
8	..	....	..	..	..	..	..	..	....	....	...	...	...	..
9	44	176	+	—	—	—	—	—	.004	.054	.70	7.2	.02	"
10	43	92	—	—	—	—	—	—	.004	.062	.66	7.2	.03	"

L = Less than.

DATE—JUNE 8TH, 1911.

SERIES: LIGHT HOUSE POINT.

Wind—Direction, E. Velocity, 2. Currents—E to W. Previous day easterly storm.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	45	720	+	+	+	+	—	—	.004	.058	.55	7.5	.10	5
2	48	117	+	—	—	—	—	—	.004	.060	.53	7.5	.05	12
3	48	152	+	—	—	+	—	—	.004	.068	.64	7.7	.10	20
4	46	16	—	—	—	—	—	—	.004	.072	.53	7.5	.14	L4
5	50	17	+	—	—	—	—	—	.004	.114	.77	8.2	.08	"
6	48	73	+	—	—	—	—	—	.004	.062	.50	7.5	.06	"
7	49	4	+	—	—	—	—	—	.004	.046	.55	7.5	.06	"
8	..	....	..	..	..	..	..	..	....	....	...	...	...	..
9	47	12	—	—	—	—	—	—	.004	.062	.55	7.5	.08	"
10	48	420	—	—	—	—	—	—	.004	.062	.66	7.2	.03	"

L = Less than.

DATE—JUNE 13TH, 1911.

SERIES: LIGHT HOUSE POINT.

Wind—Direction, W. Velocity, 9. Currents—S. shore, W. to E. West shore, W. to S.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	48	5,700	+	+	+	+	+	+	.006	.058	.60	7.2	.03	L4
2	46	128	—	—	—	—	—	—	.006	.044	.62	7.2	.04	"
3	46	128	+	—	—	+	—	—	.006	.046	.58	7.2	.06	"
4	45	168	—	—	—	—	—	—	.006	.046	.58	7.2	.05	"
5	45	152	—	—	—	—	—	—	.008	.042	.57	7.2	.02	"
6	44	110	—	—	—	—	—	—	.008	.048	.57	7.2	.02	"
7	46	112	—	—	—	—	—	—	.006	.064	.62	7.2	.10	"
8	..	....	..	..	..	..	..	..	....	....	...	...	...	"
9	46	66	—	—	—	—	—	—	.006	.044	.62	7.2	.02	"
10	47	104	+	—	—	+	—	—	.006	.040	.58	7.2	.02	"

L = Less than.

DATE—JUNE 20TH, 1911.

SERIES: LIGHTHOUSE POINT.

Wind—Direction, N. Velocity, 17. Currents—E. to W. and N. to S.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 3 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	47	1,024	+	+	—	+	—	—	.006	.080	.75	7.2	.06	L4
2	46	1,264	+	+	—	+	—	—	.006	.078	.73	7.2	.16	"
3	46	1,450	+	+	—	+	—	—	.008	.078	.74	7.2	.06	"
4	45	1,776	+	+	—	+	—	—	.010	.078	.71	7.2	.04	"
5	44	2,700	+	+	—	+	—	—	.010	.076	.71	7.2	.06	"
6	44	1,322	+	+	—	+	—	—	.014	.076	.69	7.2	.06	"

L = Less than.

DATE, JUNE 27TH, 1911.

SERIES: LIGHTHOUSE POINT.

Wind—Direction, S. Velocity, 10. Currents—W. shore, S. to W. S. shore, W. to E.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	58	1,670	+	+	+	+	+	+	.006	.070	.60	7.5	.06	L4
2	58	1,740	+	+	+	+	+	—	.008	.070	.64	7.5	.10	"
3	55	558	+	+	+	+	+	—	.008	.066	.56	7.2	.08	"
4	55	72	+	+	—	+	—	—	.006	.066	.55	6.7	.06	"
5	55	122	+	+	—	+	—	—	.008	.062	.57	6.7	.08	"
6	54	54	—	—	—	—	—	—	.008	.064	.58	7.2	.08	"
7	54	59	+	+	—	+	—	—	.010	.060	.52	6.7	.06	"
8	56	67	+	+	—	+	—	—	.012	.058	.46	6.7	.06	"
9	57	99	+	+	—	+	—	—	.008	.058	.48	6.7	.06	"
10	57	68	—	—	—	—	—	—	.004	.058	.46	6.7	.08	"

L = Less than.

DATE—JULY 4TH, 1911.

SERIES: LIGHTHOUSE POINT.

Wind—Direction, E. Velocity, 5. Currents—E. to W.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	58	1,320	+	+	—	+	—	—	.008	.068	.56	8.1	.06	L4
2	56	260	+	—	—	+	—	—	.006	.062	.54	7.7	.06	"
3	62	72	+	—	—	+	—	—	.006	.066	.51	7.7	.08	"
4	46	51	+	—	—	+	—	—	.006	.060	.51	7.7	.08	"
5	40	37	+	—	—	—	—	—	.006	.058	.52	7.7	.08	"
6	42	15	—	—	—	—	—	—	.004	.060	.53	7.7	.06	"
7	43	140	+	+	—	+	—	—	.008	.062	.53	7.7	.08	"
8	43	260	+	+	—	+	—	—	.010	.064	.54	7.7	.06	"
9	43	310	+	+	—	+	—	—	.008	.064	.55	7.2	.08	"
10	45	340	+	+	—	+	—	—	.010	.064	.56	7.2	.06	"

L = Less than.

DATE—JULY 13TH, 1911.

SERIES: LIGHTHOUSE POINT.

Wind—Direction, W. Velocity, 7. Currents—W. shore, S. to N. S. shore, W. to E.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	54	1,060	+	+	+	+	+	+	.006	.064	.68	6.7	.06	L4
2	54	784	+	+	+	+	+	—	.004	.058	.66	7.2	.06	"
3	42	540	+	+	—	+	—	—	.004	.058	.62	7.2	.08	"
4	44	172	+	+	+	+	+	—	.004	.062	.60	7.2	.08	"
5	44	73	+	+	—	+	+	—	.006	.060	.58	7.2	.10	"
6	42	73	+	—	—	+	—	—	.002	.054	.60	7.2	.08	"
7	41	58	+	+	—	+	—	—	Nil.	.052	.60	7.2	.10	"
8	41	44	+	+	—	+	—	—	.006	.056	.60	7.2	.08	"
9	41	48	+	+	—	+	—	—	.008	.058	.62	7.2	.06	"
10	44	30	+	+	—	+	—	—	Nil.	.054	.60	7.2	.06	"

L = Less than.

DATE—AUG. 1ST, 1911.

SERIES: LIGHTHOUSE POINT.

Wind—Direction, S. Velocity, 13. Currents—W. shore, S. to N. S. shore, E. to W.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	49	2,880	+	+	+	+	+	+	.018	.080	.64	7.2	.04	L4
2	51	3,230	+	+	+	+	+	—	.016	.076	.72	7.2	.06	"
3	50	890	+	+	+	+	+	—	.012	.064	.70	7.2	.06	"
4	46	1,070	+	+	+	+	—	—	.004	.052	.68	7.2	.08	"
5	48	880	+	+	—	+	—	—	.008	.058	.61	7.2	.08	"
6	44	620	+	+	—	+	—	—	.006	.056	.57	7.2	.06	"
7	46	1,240	+	+	—	+	+	—	.004	.062	.54	7.2	.06	"
8	47	770	+	+	—	+	—	—	.004	.058	.56	7.2	.08	"
9	51	350	+	+	—	+	—	—	.004	.056	.56	7.2	.08	"
10	53	960	+	+	—	+	+	—	.004	.058	.60	7.2	.06	"

L = Less than.

DATE—AUG. 10TH, 1911.

SERIES: LIGHTHOUSE POINT.

Wind—Direction, S.-W. Velocity, 16. Currents—W. shore, S. to N. S. shore, W. to E.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	66	980	+	+	+	+	+	+	.006	.074	.70	7.7	.06	L4
2	66	870	+	+	+	+	+	—	Nil.	.072	.68	7.5	.06	"
3	64	840	+	+	+	+	+	—	.008	.062	.65	7.2	.08	"
4	58	710	+	+	+	+	+	—	.008	.060	.61	7.2	.10	"
5	58	750	+	+	+	+	+	—	.010	.054	.61	7.2	.10	"
6	56	228	+	+	—	+	—	—	.008	.052	.62	7.2	.08	"
7	55	141	+	+	—	+	—	—	.006	.058	.63	7.2	.08	"
8	54	71	+	+	—	+	—	—	.006	.068	.62	7.2	.10	"
9	58	168	+	+	—	+	+	—	.004	.066	.61	7.2	.08	"
10	57	380	+	+	+	+	+	—	.006	.068	.61	7.2	.06	"

L= Less than.

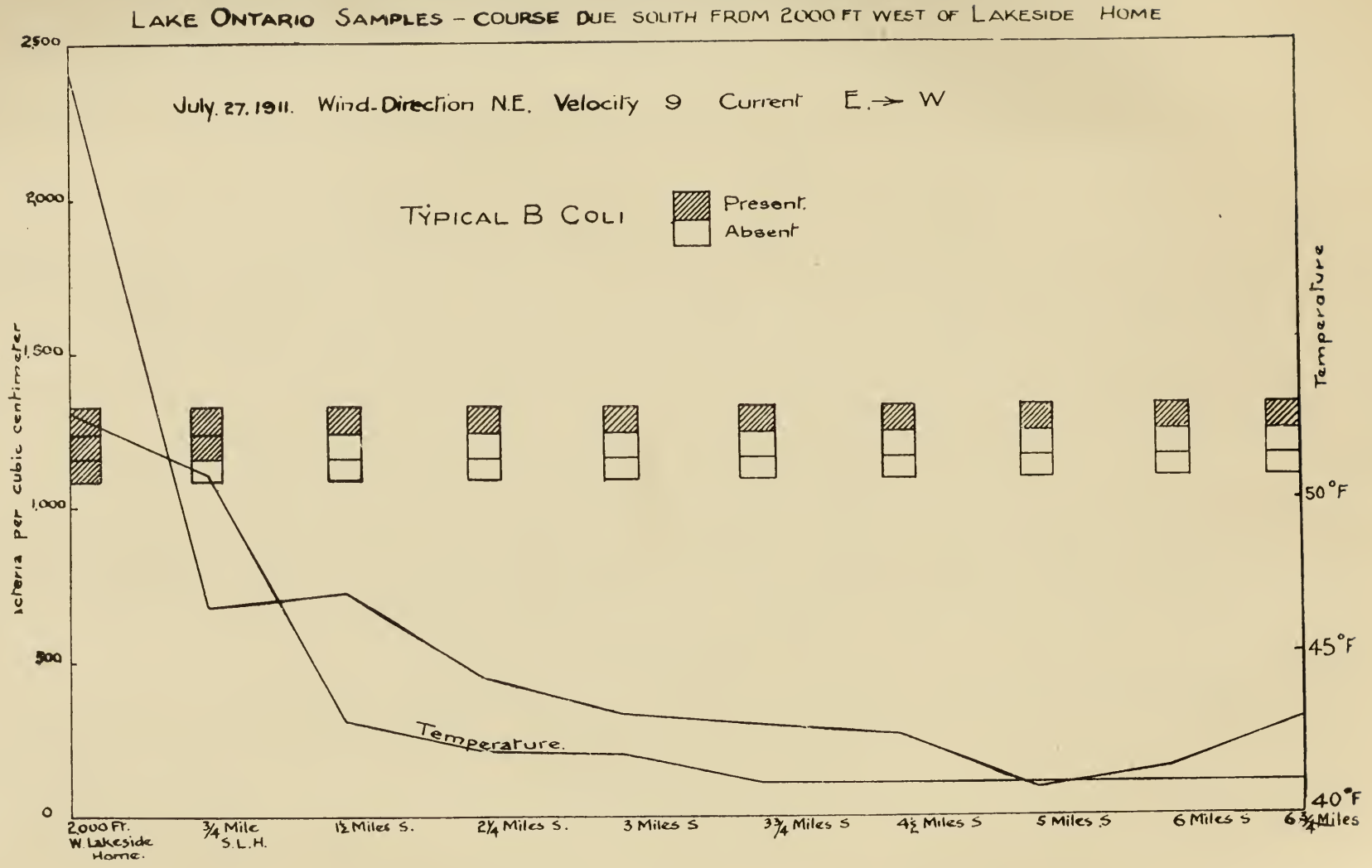
DATE—JULY 27TH, 1911.

LAKE ONTARIO SERIES.

Wind—Direction, N.-E. Velocity, 9. Currents—W. shore, N. to S. S. shore, E. to W.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	53	2,420	+	+	+	+	+	+	.008	.068	.71	7.7	.08	Less than 4
2	51	670	+	+	+	+	+	—	.004	.056	.64	7.7	.10	"
3	43	722	+	+	+	+	—	—	.006	.058	.57	7.7	.06	"
4	42	448	+	+	+	+	—	—	.004	.056	.54	7.7	.06	"
5	42	327	+	+	—	+	—	—	.004	.058	.55	7.7	.08	"
6	41	294	+	+	—	+	—	—	.006	.058	.55	7.7	.10	"
7	41	264	+	+	—	+	—	—	.006	.054	.54	7.7	.10	"
8	41	91	+	+	—	+	—	—	.006	.052	.54	7.7	.10	"
9	41	159	+	+	—	+	—	—	.004	.050	.54	7.7	.12	"
10	41	261	+	+	—	+	—	—	.004	.048	.55	7.2	.10	"

Sample No. 1 was taken 2,000 ft. west of the Lakeside Home, and the others at locations approximately three-quarters of a mile apart on a course due south from No. 1.


LAKE ONTARIO SAMPLES – COURSE DUE SOUTH FROM 2000 FT WEST OF LAKESIDE HOME
July. 27. 1911. Wind-Direction N.E. Velocity 9 Current E. → W
TYPICAL B COLI
Present.
Absent
2500
2000
1500
1000
500
0
Icteria per cubic centimeter
Temperature
50°F
45°F
40°F
Temperature.
2000 Ft. W. Lakeside Home.
¾ Mile S.L.H.
1½ Miles S.
2¼ Miles S.
3 Miles S
3¾ Miles S
4½ Miles S
5 Miles S
6 Miles S
6¾ Miles

DATE—AUG. 16TH, 1911.

SERIES—HUMBER BAY.

Wind—Direction, W. Velocity, 7. Currents—W. to E.

Sampling Point No.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			100 c.c.	10 c.c.	1 c.c.	100 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
1	61	2,460	+	+	+	+	+	+	.004	.078	.75	7.7	.04	L4
2	55	1,870	+	+	+	+	+	+	.004	.074	.73	7.7	.06	"
3	52	920	+	+	+	+	+	+	.006	.074	.61	7.2	.08	"
4	51	840	+	+	+	+	+	+	.006	.072	.63	7.2	.08	"
5	52	124	+	+	—	+	+	—	.006	.074	.66	7.2	.10	"
6	53	172	+	+	—	+	+	—	.006	.076	.53	7.2	.08	"

L= Less than.

No. 1 was taken 800 yards east of Eastern Gap, and the others at points east of this and 800 yards apart.

DAILY ANALYSES FROM SETTLING BASIN.

Lagoon.

Date.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 8 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.	Reaction.
			Presumptive.			Confirmatory.									
			10 c.c.	1 c.c.	0.1 c.c.	10 c.c.	1 c.c.	0.1 c.c.	Free.	Alb.					
April 1...	32.0	74,000	+	+	—	..	..	..	....	....	.87	8.6	..	55	Acid
" 3...	32.0	81,000	+	+	—	..	..	..	....	....	.75	8.6	..	40	"
" 4...	33.8	50,300	+	+	—	..	..	..	....	....	.77	8.6	..	50	"
" 5...	33.8	185,000	+	+	—	..	..	..	....	....	.79	8.6	..	40	"
" 6...	35.6	140,000	+	+	—	..	..	..	....	....	1.03	8.6	..	28	"
" 7...	35.6	104,000	+	+	—	..	..	..	....	....	1.07	8.6	..	34	"
" 8...	37.4	129,000	+	—	—	..	..	..	....	....	.76	8.6	..	40	"
" 10...	41.0	121,000	+	—	—	..	..	..	.142	.124	1.02	9.6	..	19	"
" 11...	41.0	83,500	+	+	—	..	..	..	.159	.104	1.01	9.6	..	40	"
" 12...	42.0	125,000	+	—	—	—	—	—	.160	.122	1.10	9.1	..	39	"
" 13...	42.0	51,400	—	—	—	—	—	—	.174	.138	1.16	9.6	..	22	"
" 15...	42.8	24,600	+	—	—	—	—	—	.176	.140	1.22	13.3	..	14	"
" 17...	37.4	26,400	—	—	—	—	—	—	.102	.090	.71	9.1	..	13	"
" 18...	37.4	23,700	+	—	—	—	—	—	.072	.100	.85	8.6	..	11	"
" 19...	41.0	132,000	+	+	—	+	—	—	.092	.104	.88	8.1	..	17	"

April 20 ..	42.0	73,000	+	+	+	+	+	+	.088	.100	.89	8.1	..	14	Acid.
" 21...	44.6	50,000	+	—	—	—	—	—	.098	.110	.91	8.1	..	15	"
" 22...	44.6	22,000	+	—	—	+	—	—	.128	.160	1.26	8.1	..	18	"
" 24...	46.4	19,400	+	—	—	—	—	—	.146	.184	1.04	9.1	..	17	"
" 25...	48.2	22,800	+	—	—	—	—	—	.170	.140	1.13	9.1	..	17	"
" 26...	48.2	59,500	+	+	+	+	+	+	.172	.136	1.03	9.1	..	23	"
" 27...	49.0	37,500	+	+	—	—	—	—	.240	.196	1.47	9.6	..	27	"
" 28...	50.0	22,160	+	—	—	—	—	—	.280	.194	1.49	9.6	..	60	"
" 29...	48.2	11,900	+	—	—	—	—	—	.148	.166	1.21	9.1	..	40	"

LAGOON SAMPLES—EX. BASIN.

Date.	Bacteria per c.c.m. on Gelatine.	Temperature in Degrees, Fahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Turbidity.	Reaction.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
May 1.....	10,500	48.2	..	+	+	..	—	—	.094	.092	.56	8.2	7	Alkaine
" 2.....	8,500	46.4	..	+	—	..	—	—	.020	.048	.68	7.7	20	Acid
" 3.....	6,300	40.0	..	+	+	..	—	—	.032	.068	.79	7.7	15	Alkaline.
" 4.....	26,800	41.0	..	+	—	..	—	—	.028	.082	.87	7.7	13	"
" 5.....	24,400	41.0	..	+	—	..	—	—	.024	.080	.59	7.2	10	"
" 6.....	10,400	44.6	..	+	—	..	—	—	.010	.072	.65	7.2	6	"
" 8.....	7,300	46.4	..	+	—	..	—	—	.026	.068	.71	7.2	10	"
" 9.....	4,150	46.4	..	+	+	..	+	+	.014	.056	.69	7.2	14	"
" 10.....	3,050	46.4	..	+	—	..	—	—	.022	.052	.55	7.2	7	"
" 11.....	41,200	46.4	..	+	+	..	—	—	.024	.084	.69	7.2	15	"
" 12.....	28,200	46.4	..	+	+	..	—	+	.038	.108	.91	7.7	15	"
" 13.....	28,400	48.2	..	+	—	..	—	—	.008	.076	.59	7.2	15	"
" 15.....	19,840	48.0	..	—	—	..	—	—	.040	.074	.64	7.2	11	"
" 16.....	3,580	48.0	..	+	—	..	—	—	.028	.070	.59	7.2	9	"
" 17.....	4,700	44.5	..	+	—	..	+	—	.012	.068	.61	7.2	9	"
" 18.....	14,200	44.5	..	+	—	..	—	—	.008	.082	.71	7.2	11	"
" 19.....	9,840	50.0	..	—	—	..	—	—	.008	.072	.76	7.2	13	"

May 20	4,200	52.0	..	+	—	..	—	.004	.086	.71	7.2	7	Alkaline.
" 22.....	1,720	59.0	..	—	—	..	—	.008	.072	.63	7.5	8	"
" 23.....	1,030	59.0	..	—	—	..	—	.008	.076	.66	7.2	11	"
" 25.....	2,680	46.5	..	—	—	—	—	.032	.096	.76	7.5	11	"
" 26.....	2,600	52.5	..	—	—	..	—	.018	.104	.77	7.5	8	"
" 27.....	5,360	52.5	..	—	—	..	+	.008	.084	.71	7.5	5	"
" 29.....	12,600	56.0	..	+	+	..	+	.006	.092	.83	7.5	11	"
" 30.....	2,360	55.5	..	+	—	..	—	.010	.088	.64	7.7	11	"
" 31.....	2,600	55.5	..	—	—	..	—	.008	.088	.66	7.7	12	"

BASIN.

Date.	Bacteria per c.c. on Gelatine.	Temperature in Degrees, Fahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
June 1.....	870	53.5	+	−	−	+	−	−	.010	.086	.72	7.7	.06	10
" 2.....	7,300	53.5	+	+	+	+	+	−	.012	.098	.69	7.7	.06	15
" 3.....	2,900	52.0	+	+	−	+	−	−	.006	.072	.59	7.5	.04	2
" 5.....	4,120	50.0	+	+	−	+	+	−	.012	.126	.68	7.7	.06	5
" 6.....	8,100	50.0	+	+	−	+	−	−	.004	.094	.66	7.7	.04	11
" 7.....	4,680	50.0	+	+	+	+	−	−	.006	.108	.72	7.7	.06	80
" 8.....	2,280	50.0	+	+	−	+	−	−	.014	.112	.79	8.2	.08	150
" 9.....	1,770	53.5	+	+	−	+	−	−	.004	.062	.69	7.5	.06	60
" 10.....	1,380	53.5	+	+	−	+	−	−	.006	.056	.79	7.5	.04	50
" 12.....	1,310	57.0	+	+	−	−	−	−	.004	.090	.65	7.7	.04	11
" 13.....	1,360	53.5	+	+	−	+	−	−	.004	.082	.66	7.7	.06	7
" 14.....	2,640	53.5	+	+	−	+	−	−	.004	.090	.72	7.7	.04	3
" 15.....	860	47.0	−	−	−	−	−	−	.004	.064	.53	7.2	.04	1
" 16.....	2,800	53.5	+	+	−	+	+	−	.006	.072	.57	7.5	.04	1
" 17.....	1,280	53.5	+	+	−	+	+	−	.004	.056	.53	7.2	.06	1
" 19.....	3,960	58.0	+	−	−	+	−	−	.004	.072	.57	7.7	.08	1
" 20.....	2,560	55.5	+	+	−	+	−	−	.010	.126	.91	7.5	.08	4

June 21.....	4,000	59.0	+	+	−	+	+	−	.008	.120	.70	7.2	.06	6
" 23.....	9,160	61.5	+	+	−	−	−	−	.008	.074	.70	7.2	.06	8
" 24.....	4,040	59.0	+	+	+	−	−	−	.006	.116	.94	7.2	.06	5
" 26.....	1,820	57.0	+	+	−	−	−	−	.006	.116	.70	7.2	.06	12
" 27.....	7,900	61.0	+	+	−	+	+	+	.004	.090	.50	7.2	.06	4
" 28.....	1,320	62.5	+	+	−	−	+	−	.016	.102	.61	7.7	.08	6

DAILY ANALYSES OF LAKE WATER.

LAKE.

Date.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.	Reaction.
			Presumptive.			Confirmatory.									
			10 c.c.	1 c.c.	0.1 c.c.	10 c.c.	1 c.c.	0.1 c.c.	Free.	Alb.					
April 1...	32.0	51,000	+	+	—	..	..	..	....	....	.78	7.2	..	64	Acid.
" 3...	32.0	27,300	+	+	—	..	..	..	....	....	.40	7.2	..	50	"
" 4...	33.8	215,000	+	+	—	..	..	..	....	....	1.02	7.7	..	140	"
" 5...	37.4	61,100	+	—	—	..	..	..	....	....	1.25	7.7	..	340	"
" 6...	35.6	153,000	+	+	—	..	..	..	....	....	.95	7.7	..	120	"
" 7...	35.6	55,000	+	+	—	..	..	..	....	....	.64	7.7	..	60	"
" 8...	35.6	59,500	+	—	—	..	..	..	....	....	.62	7.7	..	50	"
" 10...	35.6	61,000	+	—	—	..	.	..	.014	.056	.56	9.6	..	10	"
" 11...	39.2	70,500	+	—	—	..	..	..	.026	.046	.67	8.1	..	24	"
" 12...	39.2	19,000	+	+	—	+	+	—	.046	.086	1.91	8.6	..	360	"
" 13...	40.0	14,450	+	—	—	—	—	—	.032	.080	1.46	9.1	..	200	"
" 15...	46.0	32,300	+	—	—	+	—	—	.192	.098	1.13	10.5	..	10	"
" 17...	39.2	18,600	+	—	—	+	—	—	.042	.046	.40	8.6	..	11	"
" 18...	39.2	8,600	+	—	—	+	—	—	.022	.052	.52	7.7	..	4	"
" 19...	42.8	4,500	—	—	—	—	—	—	.006	.042	.51	7.2	..	3	"

April 20 ..	40.0	46,000	+	+	—	+	+	—	.018	.048	.48	7.2	..	5	Acid.
" 21...	41.0	32,000	+	+	—	—	—	—	.036	.056	.54	7.2	..	27	"
" 22...	42.8	9,400	—	—	—	—	—	—	.112	.094	1.14	7.2	..	60	"
" 24...	37.4	2,200	+	—	—	—	—	—	.040	.066	.48	7.7	..	13	"
" 25...	41.0	5,900	+	—	—	—	—	—	.007	.042	.33	7.7	..	6	"
" 26...	40.0	4,100	+	+	—	+	+	—	.006	.036	.52	8.2	..	4	"
" 27...	40.0	2,960	—	—	—	—	—	—	.012	.046	.45	7.7	..	5	"
" 28...	39.2	3,100	—	—	—	—	—	—	.004	.034	.48	7.7	..	1	"
" 29...	39.2	1,250	—	—	—	—	—	—	.008	.042	.49	7.7	..	1	"

The samples, previous to the 17th, were taken from the lake shore. The samples, after the 17th, were taken from the old wooden conduit.

LAKE SAMPLES. ISLAND SUPPLY.

Date, 1911	Bacteria per c.c.m. on Gelatine.	Temperature in Degrees, Fahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Turbidity.	Reaction.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1.0 c.c.	50 c.c.	10 c.c.	1.0 c.c.	Free.	Alb.				
May 1.....	2,440	39.2	..	—	—	..	..	..	.038	.046	.52	7.7	10	Alkaline.
" 2.....	5,130	39.2	..	+	+	..	—	+	.028	.036	.59	7.7	8	Acid.
" 3.....	4,100	40.0	..	+	+	..	—	—	.022	.030	.46	7.7	4	Alkaline.
" 4.....	4,800	39.2	..	+	+	..	—	+	.006	.046	.58	7.7	13	"
" 5.....	3,830	39.2	..	+	—	..	—	..	.006	.038	.38	7.2	2	"
" 6.....	3,500	40.0	..	+	—	..	—	..	.006	.032	.55	7.2	1	"
" 8.....	1,180	39.2	..	—	—	..	..	..	.010	.034	.49	7.2	1	"
" 9.....	1,145	40.0	..	+	+	..	+	+	.004	.022	.48	6.7	3	"
" 10.....	6,700	40.0	..	+	+	..	+	—	.032	.068	.59	7.2	4	"
" 11.....	29,600	40.0	..	+	+	..	—	—	.028	.064	.69	7.2	3	"
" 12.....	5,600	40.0	..	+	—	..	+	..	.008	.032	.42	7.2	4	"
" 13.....	11,600	40.0	+	+	+	+	—	+	.006	.038	.51	6.7	2	"
" 15.....	10,240	40.0	..	+	+	..	+	+	.040	.050	.46	7.2	5	"
" 16.....	2,230	41.0	..	—	—	..	..	..	.008	.032	.46	6.7	2	"
" 17.....	4,200	41.0	..	+	—	..	—	..	.032	.052	.47	7.2	1	"
" 18.....	12,000	41.0	..	+	—	..	—	..	.006	.068	.57	7.2	12	"
" 19.....	2,220	45.0	..	—	—	..	..	..	.006	.032	.76	7.2	8	"

May 20	870	48.0	..	—	—	..	..	..	.008	.084	.57	7.2	2	Alkaline.
" 22.....	980	50.0	..	—	—	..	..	..	.008	.024	.46	7.2	2	"
" 23.....	490	53.6	..	+	—	..	+	..	.008	.082	.61	7.2	5	"
" 25.....	340	43.0	..	+	—	..	—	..	.006	.040	.41	7.2	2	"
" 26.....	550	42.0	..	—	—	..	..	..	.004	.041	.47	7.2	3	"
" 27.....	2,440	46.4	..	+	—	..	+	..	.006	.044	.44	7.2	2	"
" 29.....	4,700	48.2	..	+	+	..	—	..	.006	.060	.57	7.2	3	"
" 30.....	2,720	50.0	..	+	—	..	+	..	.012	.076	.51	7.5	3	"
" 31.....	1,310	53.5	..	+	—	..	—	..	.012	.068	.56	7.7	1	"

All these samples were taken from the old wooden conduit.

LAKE.

Date.	Bacteria per c.c.m. on Gelatine.	Temperature in Degrees, Fahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	No. 3.	Turbidity.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
June 1.....	5,300	46.5	+	+	+	+	+	—	.010	.068	.57	7.7	.14	15
" 2.....	160	42.0	—	—	—	—	—	—	.012	.058	.47	7.5	.08	4
" 3.....	220	44.5	+	+	—	+	—	—	.006	.048	.51	7.2	.08	1
" 5.....	4,470	46.5	+	+	—	+	—	—	.018	.046	.49	7.2	.06	2
" 6.....	1,410	46.5	+	+	+	+	+	—	.008	.076	.52	7.5	.04	5
" 7.....	510	48.0	+	—	—	—	—	—	.006	.051	.53	7.5	.06	20
" 8.....	900	50.0	+	+	—	+	—	—	.004	.048	.47	7.5	.10	15
" 9.....	630	52.0	+	+	+	+	—	—	.004	.026	.43	7.2	.10	18
" 10.....	1,230	52.0	+	—	—	+	—	—	.004	.030	.59	7.2	.06	11
" 12.....	544	46.5	—	—	—	—	—	—	.004	.028	.55	7.2	.16	2
" 13.....	630	49.0	+	+	—	+	—	—	.008	.030	.53	7.2	.10	2
" 14.....	1,110	46.5	+	—	—	+	—	—	.006	.036	.51	7.2	.06	1
" 15.....	860	47.0	+	—	—	+	—	—	.008	.038	.47	7.2	.08	1
" 16.....	420	46.5	+	—	—	+	—	—	.006	.038	.36	7.2	.06	1
" 17.....	152	46.5	—	—	—	—	—	—	.006	.026	.34	7.2	.10	1
" 19.....	157	48.0	—	—	—	—	—	—	.014	.052	.55	7.7	.12	1
" 20.....	1,240	48.0	—	—	—	—	—	—	.016	.072	.71	7.2	.06	13

June 21	4,880	48.0	+	+	—	+	—	—	.018	.074	.61	7.2	.06	12
" 23.....	5,080	52.0	+	+	—	+	—	—	.010	.058	.42	7.2	.10	4
" 24.....	3,480	55.5	+	—	—	—	—	—	.008	.070	.55	7.2	.08	4
" 26.....	2,000	58.0	+	—	—	+	—	—	.008	.072	.43	6.7	.10	4
" 27.....	2,480	58.0	+	+	—	+	—	—	.008	.076	.40	7.6	.12	8
" 28.....	570	59.0	+	+	—	+	+	—	.008	.076	.45	7.7	.16	5
" 29.....	2,100	48.0	+	+	—	+	—	—	.006	.084	.52	6.7	.10	4
" 30.....	1,720	55.5	+	+	—	—	—	—	.014	.066	.58	7.2	.08	7

All samples, previous to the 29th, were taken from the old wooden conduit. All samples after the 29th were taken from the temporary intake.

LAKE.

Date.	Bacteria per c.c.m. on Gelatine.	Temperature in Degrees, Fahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	No. 3.	Turbidity.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
July 3.....	1,340	52.0	+	+	−	+	−	−	.016	.076	.59	7.7	.08	20
" 4.....	520	57.0	+	−	−	−	−	−	.024	.094	.50	7.7	.06	4
" 5.....	420	59.0	+	+	−	+	+	−	.016	.100	.60	7.7	.08	8
" 6.....	370	52.0	+	−	−	−	−	−	.018	.082	.58	8.1	.08	4
" 7.....	615	55.0	+	+	−	−	−	−	.018	.074	.49	8.1	.14	2
" 8.....	1,240	61.0	+	+	−	+	+	−	.024	.118	.62	7.7	.08	3
" 10.....	1,370	57.0	+	−	−	+	−	−	.006	.076	.52	7.7	.06	3
" 11.....	740	48.0	+	+	+	+	+	−	.006	.072	.34	7.7	.04	3
" 12.....	170	41.0	+	+	−	+	−	−	.004	.068	.41	7.2	.06	3
" 13.....	316	43.0	+	+	+	+	+	−	.012	.068	.39	7.2	.10	5
" 14.....	860	43.6	+	−	+	+	+	−	.008	.062	.43	7.2	.04	4
" 15.....	252	44.5	+	+	−	+	+	−	.006	.062	.41	6.7	.08	6
" 17.....	440	43.0	+	+	+	+	+	−	.004	.064	.46	6.7	.12	3
" 18.....	872	44.5	+	+	−	+	+	−	.004	.076	.54	7.2	.06	6
" 19.....	612	44.5	+	+	−	+	−	−	.004	.064	.48	6.7	.06	4
" 20.....	332	48.0	+	−	−	+	−	−	.004	.062	.53	7.2	.08	4
" 21.....	2,560	53.5	+	+	+	+	+	−	.008	.064	.52	6.7	.08	4

July 22	292	55.0	+	+	+	+	+	—	.004	.078	.51	7.2	.12	3
" 24.....	1,620	48.0	+	+	—	+	+	—	.004	.070	.48	6.7	.08	8
" 25.....	2,260	46.5	+	+	—	+	+	—	.004	.096	.55	6.7	.06	30
" 26.....	986	42.0	+	+	—	+	—	—	.004	.062	.42	7.2	.04	4
" 27.....	286	43.0	+	+	—	+	—	—	.006	.054	.61	7.2	.06	3
" 28.....	287	43.0	+	—	—	+	—	—	.002	.036	.38	7.2	.10	3
" 29.....	1,820	50.0	+	+	+	+	+	—	.026	.092	.43	7.2	.14	6
" 31.....	1,088	50.0	+	+	—	+	—	—	.008	.090	.52	7.2	.24	4

All these samples were taken from the temporary intake.

LAKE.

Date.	Bacteria per c.c.m. on Gelatine.	Temperature in Degrees, Fahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
Aug. 1.....	2,860	53.5	+	+	+	+	+	—	.006	.082	.50	7.2	.08	5
" 2.....	1,288	57.0	+	+	—	+	—	—	.004	.048	.52	7.2	.06	3
" 3.....	218	62.5	+	+	—	+	+	+	.006	.034	.56	7.7	.04	2
" 4.....	310	71.5	+	+	—	+	+	—	.004	.066	.55	7.2	.06	3
" 5.....	148	70.0	+	—	—	+	—	—	.004	.062	.61	7.2	.06	4
" 8.....	670	71.5	+	+	+	+	+	—	.014	.088	.56	7.2	.06	3
" 9.....	580	64	+	+	—	+	+	—	.006	.072	.61	7.2	.06	2
" 10.....	510	66	+	+	+	+	+	+	.016	.066	.45	7.7	.06	3
" 11.....	314	62	+	+	—	+	+	—	.010	.082	.44	7.2	.01	5
" 12.....	104	69	—	—	—	—	—	—	.010	.072	.57	7.7	.01	2
" 14.....	910	68	+	+	—	+	—	—	.002	.078	.65	7.2	.08	3
" 15.....	318	66	+	+	—	+	+	—	.008	.090	.44	7.2	.12	5
" 16.....	730	62	+	+	+	+	+	—	.006	.080	.54	7.2	.10	4
" 17.....	470	44	+	+	+	+	+	—	.006	.064	.45	7.2	Nil	3
" 18.....	310	44	+	+	+	+	+	—	.012	.068	.50	7.2	.08	5
" 19.....	119	40	+	+	—	+	+	—	Nil.	.062	.48	7.2	.14	4
" 21.....	360	44	+	+	—	..	..	..	.010	.066	.51	7.7	.08	4

Aug. 22	223	43	+	+	—	..	..	..	.008	.062	.56	7.2	.08	4
" 23.....	11,740	50	+	+	+	..	..	..	.018	.094	.51	7.7	.06	3
" 24.....	1,050	45	+	+	+	..	..	..	.006	.068	.40	7.2	.06	4
" 25.....	188	50	+	+	+	..	..	..	.006	.066	.52	7.2	.04	3
" 26.....	206	52	+	+	—	+	—	—	.008	.066	.54	7.2	.06	4
" 28.....	360	54	+	+	—	+	—	—	.002	.090	.53	7.7	.04	3
" 29.....	430	57	+	+	—	+	—	—	.006	.072	.55	7.7	.06	4
" 30.....	580	59	+	+	—	+	—	—	.008	.080	.49	7.2	.24	10
" 31.....	440	60	—	—	—	—	—	—	.006	.072	.57	7.2	.08	8

All samples previous to the 17th were taken from the temporary intake. All samples after the 17th were taken from the completed intake.

LAKE.

Date.	Bacteria per c.c.m. on Gelatine.	Temperature in Degrees, Fahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
Sept. 1.....	380	62	+	+	−	−	−	−	.008	.088	.52	7.2	.12	12
" 2.....	360	63	+	+	−	+	+	−	.006	.072	.49	7.2	.10	6
" 5.....	1,520	60	+	+	+	+	+	−	.014	.074	.45	7.2	.08	4
" 6.....	1,470	63	+	+	−	+	+	−	.014	.072	.60	7.2	.08	7
" 7.....	570	62	+	+	+	+	+	−	.008	.084	.61	7.2	.08	20
" 8.....	1,470	62	+	+	+	+	+	−	.014	.090	.64	7.2	.06	70
" 9.....	340	63	+	+	−	+	−	−	.012	.076	.58	7.2	.08	20
" 11.....	4	62	−	−	−	−	−	−	.010	.072	.43	7.2	.06	3
" 12.....	0	62	−	−	−	−	−	−	.014	.064	.50	7.2	.06	4
" 13.....	3	60	−	−	−	−	−	−	.012	.104	.49	7.7	.08	6
" 14.....	360	60	+	+	−	+	−	−	.012	.068	.46	7.2	.12	3
" 15.....	2,800	62	+	+	+	+	+	−	.012	.074	.46	7.7	.10	4
" 16.....	410	61	+	+	−	+	+	−	.010	.096	.48	7.2	.08	4
" 18.....	4	62	−	−	−	−	−	−	.010	.084	.39	7.2	.08	4
" 19.....	10	62	−	−	−	−	−	−	.008	.088	.46	7.2	.08	6
" 20.....	2,670	61	+	+	−	+	+	−	.012	.092	.44	7.6	.06	3
" 21.....	3	61	−	−	−	−	−	−	.012	.094	.47	7.7	.08	4

Sept. 22	2,420	61	+	+	—	+	+	—	.012	.098	.54	7.7	.08	5
" 23.....	7	62	—	—	—	—	—	—	.012	.080	.52	7.2	.06	4
" 25.....	3	62	—	—	—	—	—	—	.012	.102	.42	7.2	.08	6
" 26.....	2	61	—	—	—	—	—	—	.010	.088	.58	7.7	.10	3
" 27.....	260	61	—	—	—	—	—	—	.010	.086	.44	7.7	.08	6
" 28.....	5	56	—	—	—	—	—	—	.008	.094	.35	7.7	.08	6
" 29.....	6	58	—	—	—	—	—	—	.006	.088	.33	7.7	.06	20
" 30.....	80	58	—	—	—	—	—	—	.008	.078	.46	7.7	.06	6

All samples were taken from the completed intake.

LAKE.

Date.	Bacteria per c.c.m. on Gelatine.	Temperature in Degrees, F'ahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
Oct. 2.....	4	58	—	—	—	—	—	—	.012	.082	.37	7.7	.08	12
" 3.....	224	58	+	+	—	+	—	—	.014	.090	.47	7.7	.06	15
" 4.....	116	58	—	—	—	—	—	—	.010	.064	.38	7.7	.06	3
" 5.....	25	58	+	—	—	—	—	—	.006	.046	.27	7.2	.08	1
" 6.....	40	56	—	—	—	—	—	—	.010	.056	.43	7.7	.04	5
" 7.....	25	52	+	—	—	+	—	—	.012	.086	.56	7.7	.10	60
" 9.....	25	54	—	—	—	—	—	—	.004	.046	.40	7.7	.06	2
" 10.....	1,200	54	+	—	—	+	—	—	.012	.042	.45	7.7	.10	6
" 11.....	20	54	—	—	—	—	—	—	.004	.048	.41	7.7	.08	14
" 12.....	50	51	+	—	—	+	—	—	.008	.044	.38	7.2	.08	5
" 13.....	30	53	+	—	—	+	—	—	.004	.038	.40	7.2	.08	6
" 14.....	35	52	+	—	—	—	—	—	.008	.040	.41	7.2	.06	5
" 16.....	2,800	54	+	+	+	+	+	+	.012	.048	.50	7.7	.10	10
" 17.....	230	54	+	—	—	+	—	—	.012	.048	.42	7.7	.06	10
" 18.....	328	54	+	—	—	+	—	—	.004	.038	.31	7.2	.06	1
" 19.....	1,680	54	+	+	+	+	+	—	.010	.042	.48	7.7	.06	10
" 20.....	160	54	+	—	—	—	—	—	.012	.050	.56	7.7	.12	12

Oct. 21	270	54	+	+	−	+	+	−	.012	.048	.47	7.7	.14	5
" 23	380	44	+	+	−	+	+	−	.008	.042	.33	7.7	.06	3
" 24	12,080	42	+	−	−	+	−	−	.004	.038	.43	8.6	.20	5
" 25	5,440	50	+	+	+	+	+	−	.002	.040	.35	8.6	.12	2
" 26	420	46	+	−	−	+	−	−	.004	.042	.35	8.1	.10	3
" 27	280	48	+	+	+	+	+	−	.004	.038	.36	7.7	.08	1
" 28	1,784	48	+	−	−	+	−	−	.004	.040	.38	7.7	.12	1
" 31	4,160	42	+	+	+	+	+	+	.004	.038	.43	7.7	.10	3

LAKE.

Date.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.	Reaction.
			Presumptive.			Confirmatory.									
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.					
Nov. 1.....	42.0	8,960	+	+	+	+	+	—	.004	.038	.41	7.7	.08	3	Acid.
" 2.....	46.0	8,240	+	+	+	+	+	—	.056	.084	.75	8.2	.20	17	"
" 3.....	43.0	14,080	+	+	+	+	+	+	.004	.038	.31	7.7	.14	3	"
" 4.....	43.0	750	—	—	—	—	—	—	.008	.044	.48	7.7	.12	5	"
" 6.....	44.0	2,240	+	+	—	+	+	—	.002	.028	.41	7.2	.08	1	"
" 7.....	42.0	2,320	+	+	+	+	—	—	.004	.032	.46	7.7	.08	3	"
" 8.....	46.5	1,460	+	+	+	+	—	—	.008	.046	.50	7.7	.12	3	"
" 9.....	46.5	3,440	+	+	—	+	+	—	.006	.040	.45	7.7	.14	3	"
" 10.....	46.5	54,720	+	+	+	+	+	—	.006	.040	.43	7.7	.12	2	"
" 11.....	45.0	300	+	+	—	+	—	—	.004	.042	.47	8.2	.14	1	"
" 13.....	46.0	6,640	+	+	—	+	—	—	.012	.040	.51	7.7	.10	7	"
" 14.....	43.0	1,050	+	—	—	+	—	—	.002	.038	.41	7.7	.10	1	"
" 15.....	41.0	610	+	+	—	+	—	—	.004	.052	.53	8.2	.14	1	"
" 16.....	41.0	3,280	+	+	+	+	—	—	.006	.048	.55	8.2	.12	1	"
" 17.....	41.0	304	—	—	—	—	—	—	.008	.046	.49	8.2	.12	3	"
" 18.....	41.0	32,000	+	+	+	+	+	—	.008	.048	.51	8.2	.12	2	"
" 20.....	42.0	810	+	+	—	+	+	—	.006	.048	.52	8.2	.12	2	"

Nov. 21	42.0	1,180	+	−	−	−	−	.008	.050	.54	8.2	.12	1	Acid.
" 22.....	42.0	290	+	+	−	−	−	.008	.044	.38	7.7	.08	1	"
" 23.....	42.0	2,970	+	+	+	−	−	.010	.052	.49	7.7	.12	1	"
" 24.....	41.5	840	+	−	+	−	−	.008	.046	.57	7.7	.08	1	"
" 25.....	42.0	7,440	+	−	+	+	−	.006	.052	.58	8.2	.08	1	"
" 27.....	42.5	17,200	+	−	+	−	−	.008	.052	.57	8.2	.12	3	"
" 28.....	40.0	3,600	+	−	+	−	−	.008	.054	.65	8.2	.14	4	"
" 29.....	40.0	5,360	+	+	+	−	−	.008	.058	.59	8.2	.08	8	"
" 30.....	40.0	5,920	+	+	+	+	−	.006	.058	.60	8.2	.10	3	"

LAKE.

Date.	Temperature in Degrees, Fahr.	Bacteria per c.c.m. on Gelatine.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.	Reaction.
			Presumptive.			Confirmatory.									
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.					
Dec. 1.....	39.5	5,360	+	+	−	+	−	−	.006	.052	.56	7.7	.12	3	Acid.
" 2.....	39.5	920	+	+	−	+	−	−	.008	.060	.59	8.2	.12	3	"
" 4.....	39.0	1,860	+	+	−	+	+	−	.012	.064	.63	8.5	.12	3	"
" 5.....	38.0	9,700	+	+	+	+	+	−	.006	.052	.46	7.7	.16	3	"
" 6.....	40.0	3,240	+	+	−	+	+	−	.006	.048	.48	7.7	.10	3	"
" 7.....	39.0	4,520	+	+	−	+	−	−	.004	.046	.53	8.2	.18	2	"
" 8.....	41.0	8,920	+	+	+	+	+	+	.006	.068	.76	8.1	.20	17	"
" 9.....	41.0	2,060	+	+	−	−	−	−	.008	.056	.68	8.2	.18	18	"
" 11.....	41.0	12,800	+	+	+	+	+	−	.004	.064	.69	7.7	.16	4	"
" 12.....	41.0	14,240	+	−	−	+	−	−	.006	.060	.58	7.7	.14	2	"
" 13.....	39.5	14,720	+	+	+	+	−	−	.004	.058	.65	7.7	.16	6	"
" 14.....	39.0	45,120	+	+	+	+	+	+	.040	.094	.58	7.7	.18	5	"
" 15.....	39.5	22,400	+	−	−	+	−	−	.020	.068	.46	8.1	.24	9	Alk.
" 16.....	40.0	16,320	+	+	+	+	+	−	.018	.074	.57	9.5	.22	70	"
" 18.....	39.0	12,320	+	+	+	+	+	+	.002	.058	.47	8.1	.14	12	"
" 19.....	41.0	8,640	+	+	+	+	+	+	.002	.062	.40	8.6	.28	12	"
" 20.....	39.0	8,080	+	+	+	+	+	+	.002	.070	.55	8.1	.18	7	"

Dec. 21	38.5	53,440	+	+	+	+	+	.084	.126	.86	8.6	.18	55	Alk.
" 22.....	38.0	3,650	+	+	+	+	+	.016	.092	.79	7.7	.16	45	"
" 23.....	38.5	4,120	+	−	+	+	−	....	....	...	...	...	15	
" 26.....	39.0	2,320	+	−	−	+	−	.002	.062	.54	8.1	.18	5	"
" 27.....	39.0	10,560	+	+	+	+	+	.014	.076	.74	7.7	.12	13	"
" 28.....	37.5	4,810	+	+	−	+	+	.006	.064	.57	8.1	.08	7	"
" 29.....	37.0	5,440	+	+	−	+	+	.001	.082	.61	7.6	.16	5	"
" 30.....	37.0	2,420	+	+	+	+	+	.002	.068	.55	7.6	.24	4	"

CLANDEBOYE CUT SAMPLES.

Date.	Bacteria per c.c. on Gelatine.	Temperature in Degrees, Fahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Turbidity.	Reaction.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
May 19.....	2,340	39.0	—	—	—	..	..	..	.006	.034	.56	7.2	8	Alkaline
" 20.....	870	51.0	—	—	—	..	..	..	.004	.088	.68	7.2	2	"
" 22.....	620	53.5	..	—	—	..	..	..	.008	.104	.74	7.2	2	"
" 23.....	310	57.0	..	—	—	..	..	..	.012	.068	.78	7.2	2	"
" 25.....	860	44.5	..	+	—	..	—	..	.004	.072	.67	7.2	3	"
" 26.....	8,240	46.5	..	+	+	..	—	—	.008	.088	.59	7.2	2	"
" 27.....	13,300	48.0	..	+	+	..	+	—	.016	.078	.69	7.5	2	"
" 29.....	4,800	51.0	..	+	+	..	+	+	.006	.154	1.09	7.7	4	"
" 30.....	2,700	50.0	..	+	+	..	+	+	.008	.094	.59	7.7	4	"
" 31.....	1,650	53.5	..	+	—	..	—	..	.004	.102	.87	7.7	13	"

Date.	Bacteria per c.c.m. on Gelatine.	Temperature in Degrees, Fahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
June 1.....	40,800	48.0	+	+	+	+	+	—	.010	.092	.81	7.7	.07	13
" 2.....	5,400	42.8	+	+	+	+	—	—	.012	.096	.59	7.7	.06	3
" 3.....	330	45.0	+	+	—	+	+	—	.002	.072	.60	7.5	.04	1
" 5.....	1,680	47.0	+	+	—	+	+	—	.010	.028	.73	7.7	.06	2
" 6.....	5,240	47.0	+	+	+	+	+	+	.004	.094	.75	7.7	.04	140
" 7.....	3,840	48.0	+	+	+	+	—	—	.010	.106	1.03	7.7	.06	220
" 8.....	520	50.0	+	+	—	+	—	—	.004	.072	.71	7.7	.08	70
" 9.....	860	52.0	+	+	—	+	—	—	.004	.048	.63	7.5	.06	18
" 10.....	410	53.5	+	+	—	+	—	—	.004	.056	.68	7.5	.04	18
" 12.....	780	46.5	—	—	—	—	—	—	.004	.064	.67	7.5	.04	1
" 13.....	3,200	50.0	+	+	+	+	—	—	.004	.046	.61	7.5	.04	2
" 14.....	3,380	46.5	+	+	+	+	+	+	.004	.068	.55	7.2	.04	1
15.....	4,440	48.0	+	+	+	+	—	—	.004	.064	.53	7.2	.04	1
" 16.....	1,280	46.5	+	+	—	+	+	—	.004	.072	.43	7.5	.04	1
" 17.....	1,740	46.5	+	+	—	—	—	—	.002	.048	.41	7.2	.08	1
" 19.....	7,810	52.0	+	+	—	+	+	—	.004	.084	.66	7.7	.08	1
" 20.....	4,800	50.0	+	+	—	+	—	—	.006	.114	.85	7.5	.06	6

CLANDEBOYE—*Continued.*

Date.	Bacteria per c.c.m. on Gelatine.	Temperature in Degrees, Fahr.	B. Coli.						Nitrogen as Ammonia.		Oxygen Absorbed in 4 Hours at 27° c.	Chlorine.	Nitrites and Nitrates.	Turbidity.
			Presumptive.			Confirmatory.								
			50 c.c.	10 c.c.	1 c.c.	50 c.c.	10 c.c.	1 c.c.	Free.	Alb.				
June 21.....	12,080	50.0	+	+	+	+	+	+	.006	.122	.73	7.2	.08	5
" 23.....	7,280	52.0	+	+	−	+	−	−	.006	.078	.56	7.2	.08	5
" 24.....	2,880	58.0	+	+	+	+	+	+	.004	.090	.63	8.1	.08	6
" 26.....	1,120	59.0	+	+	−	+	−	−	.006	.072	.39	7.2	.08	6
" 27.....	6,700	59.0	+	+	−	+	−	−	.004	.066	.41	7.2	.06	6
" 28.....	2,880	59.0	+	+	−	+	−	−	.004	.080	.49	8.1	.12	3

SCHEDULES

WATER WORKS DEPARTMENT

SCHEDULE No. 1.

STATEMENT OF WATER PUMPED BY ENGINES NOS. 4 AND 5 FOR THE YEAR 1911.

Month.	No. of Days on which Engines were working.		Number of Hours working each Month.		Number of Strokes made by Engines each Month.		Quantity of Water Pump'd each Month by each Engine—Imperial Gallons, Gross.		Total Quantity Pumped by Nos. 4 & 5 Engines. Imp. Gallons Gross.	Percentage of Slip.	Total Quantity Pumped. Imp. Gallous Net.	Average Pressure on Pumps.	Average Lift by Engines.	Total Quantity of Coal used under Boilers each Month.
	No. 4.	No . 5	No. 4.	No. 5.	No. 4.	No. 5.	No. 4.	No. 5.						
			h. m.	h. m.								Pounds.	Ft. In.	Tons. Lbs.
January	29	31	500 45	737 00	890,829	1,542,076	187,964,919	323,835,960	511,800,879	5	486,210,835	95.4	20 11	808 555
February	25	28	371 40	644 00	648,274	1,321,079	136,785,814	277,426,590	414,212,404	5	393,501,784	94.7	21 6	680 810
March	31	31	573 15	723 35	1,003,607	1,508,202	211,761,077	316,722,420	528,483,497	5	502,059,322	98.4	20 4	872 1,450
April	30	26	636 45	553 05	1,048,477	1,065,806	221,228,647	223,819,260	445,047,907	5	422,795,512	98.0	20 1	756 740
May	29	31	638 35	735 55	1,043,302	1,462,008	220,136,722	307,021,680	527,158,402	5	500,800,482	98.7	19 9	850 980
June	30	30	704 55	713 20	1,117,501	1,411,792	235,792,711	296,476,320	532,269,031	5	505,655,580	99.3	19 10	872 40
July	31	31	683 35	734 00	1,059,744	1,446,852	223,605,984	303,838,920	527,444,904	5	501,072,659	98.4	21 7	819 60
August	31	31	731 40	731 50	1,104,303	1,430,145	233,007,933	300,330,450	533,338,383	5	506,671,469	99.2	21 8	866 1,570
September	30	30	706 05	706 30	1,040,514	1,357,353	219,548,454	285,044,130	504,592,584	5	479,362,955	100.6	22 2	841 1,530
October	31	31	665 25	705 25	955,648	1,371,970	201,641,728	288,113,700	489,755,428	5	465,267,657	98.9	22 1	837 410
November	30	25	676 45	576 55	991,349	1,109,788	209,174,639	233,055,480	442,230,119	5	420,118,613	97.7	22 4	747 460
December	23	31	465 40	700 50	668,638	1,334,574	141,082,618	280,260,540	421,343,158	5	400,276,000	98.4	22 7	720 70
Totals	350	356	7,355 05	8,262 25	11,572,186	16,361,645	2,441,731,246	3,435,945,450	5,877,676,696	5	5,583,792,868	1,177.7	254 10	9,672 675
Monthly Averages	29.1	29·6	613 00	688 32	964,350	1,363,470	203,477,604	296,328,788	489,806,391	5	465,332,739	98.1	21 3	806 56

SCHEDULE No. 2.

STATEMENT OF WATER PUMPED BY ENGINES NOS. 6 AND 7 FOR THE YEAR 1911.

Month.	Number of Days on which Engines were Working.		Number of Hours Working each Month.		Number of Strokes made by Engines each Month.		Quantity of Water Pumped each Month by each Engine. Imp. Gallons Gross.		Total Quantity Pumped by Nos. 6 and 7 Engines. Imp. Gals. Gross	Percentage of Slip.	Total Quantity Pumped. Imp. Gals. Net.	Average Pressure on Pumps.	Average Lift by Engines		Total Quantity of Coal used under Boilers each Month.	
	No. 6.	No. 7.	No. 6.	No. 7.	No. 6.	No. 7.	No. 6.	No. 7.								
			h. m.	h. m.								Pounds.	Ft.	In.	Tons.	Lbs.
January	31	25	744 ..	376 25	881,275	438,602	466,018,220	231,932,738	697,950,958	5	663,053,410	97.5	20	0	1,222	135
February	28	24	626 30	456 15	726,681	506,887	384,268,913	268,041,845	652,310,758	5	619,695,220	97.5	20	7	1,070	1,290
March	31	27	726 ..	562 15	838,999	632,775	443,662,671	334,611,420	778,274,091	5	739,360,386	100.5	19	3	1,280	150
April	30	28	655 45	584 50	765,675	670,193	404,888,940	354,398,058	759,286,998	5	721,322,649	98.1	19	4	1,202	230
May	31	29	739 55	632 20	850,264	721,040	449,619,603	381,285,952	830,905,555	5	789,360,277	99.9	18	11	1,224	1,790
June	29	30	663 45	701 45	771,412	825,547	407,922,665	436,549,254	844,471,919	5	802,248,323	100.7	19	0	1,197	1,240
July	31	31	733 05	731 20	855,663	848,587	452,474,594	448,732,806	901,207,400	5	856,147,030	99.8	20	8	1,246	1,080
August	31	31	733 10	732 05	841,969	848,637	445,233,207	448,759,246	893,992,453	5	849,292,830	99.7	20	9	1,305	1,340
September	30	30	713 50	707 35	816,367	822,139	431,694,870	434,747,103	866,441,973	5	823,119,875	102.8	21	2	1,267	1,025
October	31	31	734 ..	719 20	838,545	828,314	443,422,596	438,012,443	881,435,039	5	837,363,287	100.1	21	5	1,355	1,045
November	30	30	717 20	716 ..	845,815	843,038	447,266,972	445,798,494	893,065,466	5	848,412,193	98.8	21	9	1,380	1,800
December	31	31	721 45	723 35	830,427	841,825	439,129,798	445,157,060	884,286,858	5	840,072,515	100.2	21	9	1,358	900
Totals	364	347	8,509 05	7,643 45	9,863,092	8,827,584	5,215,603,049	4,668,026,419	9,883,629,468	5	9,389,447,995	1,195.6	244	7	15,112	55
Averages	30.3	28.9	709 05	628 39	82,199	735,632	434,633,587	389,002,201	823,635,789	5	782,453,999	99.6	20	4	1,259	144

SCHEDULE No. 3.

RECORD OF WATER RE-PUMPED AT HIGH LEVEL STATION FOR THE YEAR 1911.

Month.	Number of Hours Engines working.				Number of Revolutions made by Pumps.				Quantity of Water Re-pumped.				Total Quantity of Water Re-pumped by all Engines in Imp. Gallons Gross.	Percentage of Slip.	Total Quantity of Water Re-pumped Imp. Gallons Net.	Average Pressure on Force Mains.	Average Pressure on Suction Mains.	Total Quantity of Coal Consumed under Boilers.	
	No. 1.	No. 2.	No. 3.	No. 4.	No. 1.	No. 2.	No. 3.	No. 4.	No. 1.	No. 2.	No. 3.	No. 4.							
	h. m.	h. m.	h. m.	h. m.												Lbs.	Lbs.	Tons.	Lbs.
January	128 00	621 30	602 40	571 45	216,731	1,005,930	820,510	840,015	9,752,895	45,769,815	118,973,950	121,802,175	295,298,835	2	290,372,859	69.3	21.4	294	79
February	206 30	503 50	523 30	538 25	393,502	912,945	753,177	779,811	17,707,590	41,538,997	109,210,665	113,072,595	281,529,847	2	275,899,251	72.5	21.	286	1,739
March	335 40	735 45	733 25	739 30	679,192	1,302,601	1,071,807	1,005,667	30,563,640	59,268,345	155,412,015	145,821,715	391,065,715	2	383,244,401	83.7	22.3	407	929
April	279 00	718 30	663 50	675 55	577,167	1,281,206	977,514	915,054	25,972,515	58,294,873	141,739,530	132,682,830	358,689,748	2	351,515,954	81.1	21.	392	552
May	338 50	741 35	639 20	653 25	736,693	1,403,137	963,146	1,007,718	33,151,185	63,842,733	139,656,170	146,119,110	382,769,198	2	375,113,815	81.3	19.	399	349
June	367 15	671 00	626 15	640 15	748,374	1,233,421	1,015,250	1,024,130	33,676,830	56,120,655	147,211,250	148,498,850	385,507,585	2	377,797,434	77.6	21.2	389	1,979
July	166 15	733 30	643 50	631 30	347,510	1,339,286	1,030,875	1,027,314	15,637,950	60,937,513	149,476,875	148,960,530	375,012,868	2	367,512,611	75.4	21.	292	1,164
August	167 35	739 30	656 00	647 00	348,701	1,414,873	1,017,968	1,029,703	15,691,545	64,376,721	147,605,360	149,306,935	376,980,561	2	369,440,950	73.2	21.9	292	1,867
September	47 45	708 00	625 30	629 00	100,871	1,354,202	919,464	983,592	4,539,195	61,616,191	133,322,280	142,620,840	342,098,506	2	335,256,536	73.4	21.	296	1,854
October	92 40	706 00	636 30	652 15	179,095	1,307,925	925,957	1,058,851	8,059,275	59,510,587	134,263,765	153,533,830	355,367,457	2	348,260,108	75.7	21.	284	439
November	43 20	607 45	629 15	622 40	87,853	1,336,263	958,469	987,417	3,953,385	60,799,966	138,978,005	143,175,465	346,906,821	2	339,968,685	77.3	19.9	272	470
December	174 45	573 15	640 30	657 15	414,980	1,255,089	978,871	1,020,249	20,024,100	57,106,549	141,936,295	147,936,105	367,003,049	2	359,662,989	76.6	20.2	277	74
Totals	2,347 35	8,060 10	7,620 35	7,658 55	4,860,669	15,146,878	11,433,008	11,679,524	218,730,105	689,182,945	1,657,786,160	1,693,530,980	4,259,230,190		4,174,045,593	917.1	250.9	3,885	1,486
Monthly Averages	195 38	671 41	635 03	638 14	405,055	1,262,239	952,750	973,293	18,227,508	57,431,912	138,148,846	141,127,581	354,852,515		347,837,132	76.4	20.9	323	1,623

SCHEDULE No. 4.

COMPARATIVE STATEMENT OF COAL CONSUMED AND WATER PUMPED BY MONTHS FOR THE YEARS 1910 AND 1911.

MONTHS.	1910. Engines Nos.	1910. Water. Quantity Pumped.	1910. Water. Total Quantity Pumped	1910. Coal. Quantity Consumed.	1910. Coal. Total Consumption.	1911. Engines Nos.	1911. Water. Quantity Pumped.	1911. Water. Total Quantity Pumped.	1911. Coal. Quantity Consumed.	1911. Coal. Total Consumption.
		Imp.Gals. Net.	Imp.Gals. Net.	Tons. Lbs.	Tons. Lbs.		Imp.Gals. Net.	Imp.Gals. Net.	Tons. Lbs.	Tons. Lbs.
January	1 and 2	1,706,375		6 190		4 and 5	486,210,835		808 555	
	4 and 5	573,142,331		877 1,200		6 and 7	663,053,410		1,222 135	
	6 and 7	429,984,493		712 1,820		West Toronto..	54,182,764		231 1,798	
						East "	201,000		1 790	
			1,004,833,199		1,596 1,210			1,203,648,009		2,263 1,278
February	1 and 2					4 and 5	393,501,784		680 810	
	4 and 5	521,974,512		755 500		6 and 7	619,695,220		1,070 1,290	
	6 and 7	398,878,864		644 860		West Toronto..	43,863,646		181 1,070	
						East "				
			920,853,376		1,399 1,360			1,057,060,650		1,932 1,170
March	1 and 2	14,039,579		62 1,570		4 and 5	502,059,322		872 1,450	
	4 and 5	577,308,165		887 130		6 and 7	739,360,386		1,280 180	
	6 and 7	432,881,617		683 1,360		West Toronto..			15 1,000	
						East "				
			1,024,232,361		1,633 1,060			1,241,419,708		2,168 630
April	1 and 2					4 and 5	422,795,512		756 740	
	4 and 5	552,058,833		861 1,225		6 and 7	721,322,649		1,202 230	
	6 and 7	423,048,910		692 315		West Toronto..			15	
						East "				
			975,107,743		1,553 1,540			1,144,118,161		1,973 970
May	1 and 2					4 and 5	500,800,482		850 980	
	4 and 5	563,068,999		865 1,365		6 and 7	789,360,277		1,224 1,790	
	6 and 7	436,571,939		649 1,225		West Toronto..			15 1,000	
						East "	144,000		1	
			999,640,938		1,515 590			1,290,304,759		2,091 1,770
June	1 and 2	125,600,310		395 1,880		4 and 5	505,655,580		872 40	
	4 and 5	537,261,192		786 940		6 and 7	802,248,323		1,197 1,240	
	6 and 7	430,476,806		696 790		West Toronto..			15	
						East "	984,520		6 833	
			1,093,338,308		1,878 1,610			1,308,888,423		2,091 113
July	1 and 2	288,304,396		966 190		4 and 5	501,072,059		819 60	
	4 and 5	500,220,069		729 250		6 and 7	856,147,030		1,246 1,080	
	6 and 7	440,372,795		723		West Toronto..	31,407,566		155 225	
						East "	2,229,000		15 958	
			1,228,897,260		2,418 440			1,390,856,255		2,236 323
August	1 and 2	14,819,812		45 700		4 and 5	506,671,469		866 1,570	
	4 and 5	554,718,072		798 280		6 and 7	849,292,830		1,305 1,340	
	6 and 7	544,991,776		930 160		West Toronto..	50,686,623		231 1,798	
						East "	2,502,018		17 750	
			1,114,529,660		1,773 1,140			1,409,152,940		2,421 1,458
September	1 and 2					4 and 5	479,362,955		841 1,530	
	4 and 5	493,207,347		764 790		6 and 7	823,119,875		1,267 1,025	
	6 and 7	590,620,633		949 900		West Toronto..	52,728,671		224 830	
						East "	2,431,000		16 1,767	
			1,083,827,980		1,713 1,690			1,357,642,501		2,350 1,152
October	1 and 2	4,125,905		19 1,310		4 and 5	465,267,657		837 410	
	4 and 5	485,288,671		771 1,610		6 and 7	837,363,287		1,355 1,045	
	6 and 7	627,022,643		976 710		West Toronto..	54,712,911		231 1,798	
						East "	2,275,000		15 1,600	
			1,116,437,219		1,767 1,630			1,359,618,855		2,440 853
November	1 and 2	103,104,023		441 1,100		4 and 5	420,118,613		747 460	
	4 and 5	549,777,081		884 1,080		6 and 7	848,412,193		1,380 1,800	
	6 and 7	439,447,950		758 280		West Toronto..	47,614,298		224 830	
						East "	2,192,000		15 455	
			1,092,329,054		2,084 460			1,318,337,104		2,367 1,545
December	1 and 2	5,886,675		56 1,430		4 and 5	400,276,000		720 70	
	4 and 5	559,694,406		927 1,575		6 and 6	840,072,515		1,358 900	
	6 and 7	557,707,513		976 155		West Toronto..	54,289,559		231 1,798	
						East "	2,305,000		16 17	
			1,123,288,594		1,960 1,160			1,296,943,074		2,326 785
Totals			12,777,315,692		21,295 1,890			15,377,990,439		26,664 47
Daily averages			35,006,344		58 690			42,131,480		73 104

SCHEDULE No. 5.

COMPARATIVE STATEMENT SHOWING NUMBER OF GALLONS PUMPED, QUANTITY AND COST OF FUEL, ETC., FROM 1876 TO 1911, INCLUSIVE.

YEAR.	Total Water Pumped — Imp. Gals.	Quantity of Fuel. Lbs.	Total Cost of Fuel.	Average Daily Quantity of Water Pumped — Imp. Gals.	Average Daily Consumption of Coal. Lbs.	Water Pumped per Pound of Fuel. — Imp. Gals.
1876	1,625,139,876	6,998,282	$19,645 75	4,451,202	19.093	232.02
1877	2,633,433,932	10,407,992	25,556 29	7,214,887	28,515	253.02
1878	1,417,370,918	8,120,000	15,196 20	3,883,208	22,246	174.55
1879	1,610,104,542	10,872,211	19,313 07	4,411,245	29,787	148.09
1880	1,785,859,706	11,694,808	28,455 72	4,879,422	31,953	152.17
1881	1,910,430,419	12,391,874	31,410 04	5,234,056	33,950	154.18
1882	2,108,933,115	11,685,556	30,170 64	5,777,899	32,015	180.47
1883	2,809,965,484	17,266,679	43,529 08	7,698,511	47,306	162.74
1884	3,645,442,082	19,920,782	52,525 56	9,960,224	54,428	183.00
1885	3,537,482,598	18,644,465	46,589 27	9,691,733	54,081	189.73
1886	4,134,376,998	19,285,371	41,979 32	11,327,060	52,837	214.37
1887	4,417,938,169	23,283,900	50,051 85	12,103,940	63,791	189.74
1888	4,041,964,514	20,457,935	46,600 77	11,073,875	56,049	197.57
1889	4,148,781,634	19,231,940	44,135 10	11,366,525	52,690	215.72
1890	5,249,760,226	34,615,830	56,239 99	14,382,904	67,536	212.96
1891	6,207,656,403	29,300,240	60,012 77	17,007,275	80,291	211.86
1892	6,659,925,650	34,505,875	71,805 25	18,246,371	94,278	193.00
1893	6,646,021,488	26,013,840	64,702 86	18,208,278	71,270	255.47
1894	6,589,492,142	26,822,145	54,902 85	18,053,403	73,485	245.67*
1895	6,639,680,218	21,178,879	40,221 85	18,190,902	58,024	313.5*
1896	6,718,187,980	18,606,508	25,307 90	18,527,836	50,837	364.4
1897	6,723,757,030	20,711,250	26,880 50	18,421,253	56,743	324.64
1898	7,136,334,102	22,100,145	27,572 00	19,551,600	60,548	322.91
1899	7,824,348,217	24,682,935	26,684 57	21,436,569	67,642	316.99
1900	8,064,384,595	24,148,565	38,668 54	22,094,204	66,160	333.95
1901	8,299,298,465	26,292,640	39,402 87	22,463,831	72,034	314.89
1902	7,993,916,325	23,769,930	39,260 22	21,901,140	64,575	339.15
1903	8,735,658,003	30,260,615	54,275 93	23,933,309	82,900	288.68
1904	9,076,711,575	32,843,325	55,784 05	24,799,758	89,735	276.36
1905	9,174,732,461	34,512,095	49,644 31	25,136,253	94,553	265.84
1906	9,859,486,414	27,649,495	43,542 28	27,012,291	75,752	356.62
1907	10,356,547,168	30,768,630	48,380 46	28,374 101	84,297	359.19
1908	10 699,056,355	31,750,575	49,226 46	29,232,449	86,750	366.00
1909	11,419,392,921	33,790,900	47,615 39	31,267,905	92,577	337.94
1910	12,777,315,692	42,591,890	43,779 08	35,032,133	116,690	300.00
1911	15,377,990,439	53,328,047	65,784 38	42,131,480	146,104	288.36†

* A larger percentage was allowed for slip in 1894 and 1895. than in other years.

† This includes pumpage at East Toronto and West Toronto.

SCHEDULE No. 6.

QUANTITY OF WATER PUMPED AND QUANTITY CONSUMED DURING EACH MONTH OF 1911, WITH AMOUNT OF DAILY CONSUMPTION.

Month.	Total Quantity Consumed during each Month, including East Toronto and West Toronto.	Total Quantity Pumped per Month in Imperial Gallons	Quantity Stored in Reservoir at end of each Month. Imperial Gallons	Quantity Consumed during each Month. Imperial Gallons	Average Daily Consumption of Water. Imperial Gallons	Average Monthly Consumption of Coal at Main Pumping Station	
						Tons.	Lbs.
Stored in Reservoir on 31st December, 1910	.....	.....	21,786,475	.....	.....	.....	.....
January	1,192,465,280	1,149,264 245	32,969,204	1,138,081,516	36,712,307	2,030	690
February	1,066,234,887	1,013,197,004	23,794,967	1,022,371,241	36,513,258	1,751	100
March	1,238,964,061	1,241,419,708	26,250,614	1,238,964,061	39,966,582	2,152	1,630
April	1,155,726,587	1,144,118,161	14,642,188	1,155,726,587	38,524,219	1,958	970
May	1,294,918,317	1,290,160,759	10,028,630	1,294,774,317	41,766,913	2,075	770
June	1,302,007,389	1,307,903,903	16,909,664	1,301,022,869	43,367,429	2,069	1,280
July	1,375.805,507	1,357,219,689	31,960,412	1,342,168,941	43,295,772	2,065	1,140
August	1,414,655,380	1,355,964,299	26,457,972	1,361,466,739	43,918,282	2,172	910
September	1,357,849,859	1,302,482,830	26,250,614	1,302,690,188	43,423,006	2,109	555
October	1,351,639,269	1,302,630,944	34,230,200	1,294,651,358	41,762,947	2,192	1,455
November	1,326,523,948	1,268,530,806	26,043,256	1,276,717,750	42,557,258	2,128	260
December	1,293,173,537	1,240,348,515	29,812,793	1,236,578,978	39,889,644	2,078	970
Totals	15,369,964,021	14,973,240,863	.....	14,965,214,545	491,697,617	24,784	730
Averages	1,280,830,335	1,247,770,072	.....	1,247,101,212	40,974,801	2,065	116

SCHEDULE No. 7.

COMPARATIVE STATEMENT SHOWING INCREASE OF DEPARTMENT YEARLY, 1875 TO 1911, INCLUSIVE.

YEAR.	Average Daily Consumption of Water.	Population.	Average Daily Consumption of Water per Capita for all Purposes.	Total Number of House Services in use in each year.	Number of House Services put in each year.	Total Number of Hoists in use in each year.	Total Number of Meters in use each year.	Total Number of Miles of Mains in use each year.	Average Pressure on Pumps.						
									No. 1, Worthington Engine.	No. 2, Worthington Engine.	No. 3, Inglis & Hunter Engine.	No. 4, Blake Engine.	No. 5, Blake Engine.	No. 6, Jno. Inglis Co. Engine.	No 7. Jno. Inglis Co. Engine.
			Gallons.					Miles.							
1875 ..	3,424,000	68,678	49.86	2,769	842	.....	.....	49.810	88.10	.....	.....	.....	.....	.....	.....
1876 ..	4,451,202	71,693	62.09	3,512	740	.....	.....	80.250	88.78	97.51	.....	.....	.....	.....	.....
1877 ..	2,812,000	67,386	41.74	4,518	1,006	.....	.....	107.570	83.33	97.69	.....	.....	.....	.....	.....
1878 ..	3,883,208	70,867	54.79	6,707	2,189	28	.....	110.240	89.65	96.64	.....	.....	.....	.....	.....
1879 ..	4,411,245	73,813	59.76	8,568	1,861	47	.....	111.290	95.28	99.04	.....	.....	.....	.....	.....
1880 ..	4,879,422	75,110	64.96	.....	1,014	66	.....	113.312	98.22	99.52	.....	.....	.....	.....	.....
1881 ..	5,234,056	76,934	68.03	12,236	2,654	79	.....	115.518	96.32	100.78	.....	.....	.....	.....	.....
1882 ..	5,777,899	81,372	71.01	14,062	1,826	94	.....	116.115	94.85	101.66	.....	.....	.....	.....	.....
1883 ..	7,698,511	91,796	83.87	16,276	1,766 / 448	109	.....	131.352	94.27	105.49	.....	.....	.....	.....	.....
1884 ..	9,960,224	105,211	94.66	18,363	2,087	130	.....	138.301	99.14	107.03	.....	.....	.....	.....	.....
1885 ..	9,706,127	111,800	86.82	20,707	2,344	140	195	143.257	98.84	106.45	103.88	.....	.....	.....	.....
1886 ..	11,344,337	118,403	95.81	23,643	2,936	152	256	156.042	104.88	104.92	104.67	.....	.....	.....	.....
1887 ..	12,060,616	126,169	95.59	26,893	3,315	176	332	165.894	.....	.....	.....	.....	.....	.....	.....
1888 ..	11,069,784	136,809	66.36	29,883	3,055	174	897	182.625	93.41	92.36	94.57	.....	.....	.....	.....
1889 ..	11,378,962	175,000	65.02	34,056	3,288	222	1,317	212.832	94.25	94.82	94.92	.....	.....	.....	.....
1890 ..	14,434,722	185,000	78.02	36,192	2,191	229	1,479	229.257	92.83	93.55	93.58	.....	.....	.....	.....
1891 ..	17,007,275	188,901	90.03	38,250	2,111	230	1,544	237.967	93.33	93.66	93.91	.....	.....	.....	.....
1892 ..	18,246,371	188,904	96.59	39,401	1,200	288	1,535	242.561	.....	.....	.....	.....	.....	.....	.....
1893 ..	18,208,278	188,904	96.38	39,927	526	300	1,600	244.964	94.18	94.18	94.18	96.37	.....	.....	.....
1894 ..	18,056,881	188,904	95.58	40,326	399	258	1,580	245.478	94.88	94.88	94.88	95.24	95.24	.....	.....
1895 ..	18,192,063	190,000	95.74	40,683	357	.....	1,500	.....	94.88	94.88	94.88	95.05	95.05	.....	.....
1896 ..	18,527,836	195,987	94.53	40,951	313	230	1,553	249.627	94.5	94.5	94.5	95.4	95.4	.....	.....
1897 ..	18,378,722	195,987	93.77 *	41,315	364	230	1,553	252.646	95.1	95.1	95.1	95.7	95.7	.....	.....
1898 ..	19,576,957	200,000	97.88	41,838	523	230	1,580	255.625	95.3	95.3	95.3	95.9	95.9	.....	.....
1899 ..	21,436,509	225,000	95.27	42,552	714	230	1,598	257.613	94.9	94.9	94.9	95.3	95.3	.....	.....
1900 ..	22,094,201	235,000	94.01	43,242	690	230	1,700	258.774	94.0	94.0	94.0	93.5	93.5	.....	.....
1901 ..	22,507,266	235,000	95.77	44,275	1,033	239	1,800	260.321	93.8	93.8	93.8	93.2	93 2	.....	.....
1902 ..	21,901,140	236,000	88.57	45,607	1,319	241	1,820	264.466	94.1	94.1	94.1	92.6	92.6	.....	.....
1903 ..	23,933,847	245,000	93.60	48,529	1,402	241	1,844	266.955	94.6	94.6	94.6	93.2	93 2	.....	.....
1904 ..	24,803,478	250,000	99.20	50,847	2,036	245	2,043	272.853	94.3	94.3	.....	93.1	93.1	.....	.....
1905 ..	25,044,681	270,000	92.75	54,012	3,185	250	2,331	286.619	94.9	94.9	.....	93.4	93.4	.....	.....
1906 ..	26,996,007	295 000	91.51	58,053	4,041	256	2,513	293.552	90.1	90.1	.....	89.1	89.1	91.9	.....
1907 ..	28,291,468	310,000	91.2	62,034	3,961	264	2,587	305.597	90.1	90.1	.....	91.9	91.9	93.8	.....
1908 ..	29,250,552	315,000	92.8	65,303	3,672	515	2,768	323.743	91.1	91.1	.....	93 3	93 3	96 1	.....
1909 ..	31,267,905	325,000	96.2	70,450	5,147	530	2,978	341.532	93.5	93.5	.....	95.5	95.5	98.1	.....
1910 ..	35,032,133	360,0 0	97.3	76,601	6,151	584	3,250	399.965	93 0	93.0	.....	94.5	94.5	96.9	96 9
1911 ..	42,131,637	425,000	99.1	83,605	7,004	711	3,337	433,835	.....	.....	.....	97 8	98.2	99.7	100.5

SCHEDULE No. 8.

RECORD OF GAUGING AT ROSEHILL RESERVOIR FOR EACH MONTH OF THE YEAR 1911.

1911. Month.	Elevation of Lowest Water Above Zero.		Elevation of Highest Water Above Zero.		Average Elevation Above Zero.		Average Depth in Reservoir.		Average Contents in Imperial Gallons.
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	
January	209	1	216	7	212	8	16	8	24,608,074
February	196	0	216	8	211	8	15	8	22,184,937
March	212	1	216	1	213	10	17	10	27,494,764
April	198	6	214	10	212	0	16	0	22,981,860
May	206	3	214	2	210	10	14	10	20,200,646
June	206	5	215	0	211	10	15	10	22,583,399
July	200	9	217	5	211	3	15	3	21,188,782
August	210	0	216	7	213	9	17	9	27,287,406
September	212	4	216	8	214	1	18	1	28,120,960
October	208	11	217	4	213	2	17	2	25,835,897
November	202	8	217	4	212	0	16	0	22,981,860
December	205	5	215	8	212	0	16	0	22,981,860
Averages	.....		.....		212	5	16	5	24,037,537

NOTE.—The average depth of water in the Reservoir for the year was 16 ft. 5 in., equal to an elevation of 212 ft. 5 in. above zero.

SCHEDULE No. 9.

Statement of Mains Laid During the Year 1911.

Street, Avenue, etc.	Side of Street.	Location.	Length in Feet.
16-in. Mains:			
Yonge St.	West.	From McPherson Ave. 832 ft. south	837
Rosedale Valley Dr	North	" Yonge St. to Broadview Ave	10,305
			11,142
12-in. Sub-Mains:			
Annette St.	North	" Runnymede Rd. west to Jane St	2,220
Bathurst St	East.	" 12 ft. s. of St. Clair s. to Nina	1,225
Cherry St.	East.	" Front St. 1,985 ft. south	2,006
Coxwell Ave.	West.	" Gerrard St. to 12 ft. n. of n. line of Gerrard jog to east	989
Danforth Ave.	South.	" Lincoln Ave. to e. City limits, 107 ft. e of Luttrell Ave	10,532
Elliott St.	North	" Broadview Ave. 915 ft. w. to bridge	915
Gerrard St.	South	" Victoria Park Ave. e. City limits, w. to 620 ft. w. of Woodbine Ave	7,443
Gerrard St.	South	" Coxwell Ave. 660 ft. east	708
Gerrard St.	North	" e. line of Erie Terrace e. to Coxwell Ave	506
Keele St.	West.	" 12 ft. n. of St. Clair Ave. 210 ft. n.	210
Main St.	East.	" Gerrard St. to Danforth Rd.	1,600
River St.	East.	" across Wilton Ave	45
Station St.	East.	" Davenport Rd. to 12 ft. s. of St. Clair Ave	1,814
Wayland Ave.	East.	" 12 in. on Gerrard St. to 10 in. discharge main	50
Weston Rd., South	East.	" Keele St. n. to Northlands Ave	2,700
Wilton Ave.	North	" River St. 507 ft. e. to bridge	529
			33,492
6-in. Sub-Mains:			
Alcina Ave.	North	" connec. to 6-in. Bracondale extn	23
Alhambra Ave.	West.	" extn. to 6-in. main on Bloor St	18
Alvin Ave.	West.	" 300 ft. n. of St. Clair 224 ft. n.	224
Amroth Ave.	West.	" 12-in. main on Danforth Ave. 30 ft. s.	30
Antler Ave.	North	" Symington Ave. to Campbell Ave.	272½
Applegrove Ave.	North	" Ashdale Ave. w. to Morley Ave.	568
Ascot Ave.	North	" Dufferin St. 1,812 ft. w. to Harvie	1,860
Ashburnam Ave.	North	" Greenlaw Ave. e. to Macfarland Ave.	1,103
Ashdale Ave	West.	" 12-in. main on Danforth Ave. 30 ft. s.	30
Astley Ave.	West.	" Douglas Drive 1,000 ft. north	1,012
Avoca Ave.	West.	" St. Clair Ave. to Pleasant Blvd.	326
Bain Ave.	North	" 578 ft. e. of Broadview Ave. 542 ft. e.	542
Baird Ave	South	" 200 ft. e. of Dunedin Ave. 50 ft. e.	50
Balsam Avenue	South	" Beech Ave. 363 ft. e. to Willow Ave.	420
Barber St.	West.	" Annette Street n. to Maher Ave.	802
Barrett Ave.	West.	" Edna Ave. 132 ft. north	150
Bartlett Avenue	West.	" Connec. to 6 in across Davenport Rd.	35
Bastedo Ave.	West.	" 12-in. main Danforth Ave. 30 ft. s.	30
Bathurst St	West.	" 20 ft. s. of Nina St. 110 ft. south	110

SCHEDULE No. 9—*Continued.*

STATEMENT OF MAINS LAID DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	Length in Feet.
Bedford Road	West.....	From Dupont St. 172 ft. s. to old main....	222
Benson Avenue ..	North	" 12 ft. w. of Christie w. to Arlington Ave.....	833
Beresford Ave.....	West.....	" S. line of Colbeck Ave. to 405 ft. n of Colbeck.....	471
Beresford Ave.....	West.....	" Annette St. 643 ft. s.....	691
Bertmount Ave. ..	West.....	" 155 ft. s. of Mallon to 107 ft. n. of Mallon.	328
Bird Avenue.....	North	" 7 ft. w. of Dufferin St. 1,157 ft. w...	1,157
Blackthorne Ave..	West.....	" Rockwell Ave. s. to T. & N. Reserve	747
Blackthorne Ave..	West.....	" Rockwell Ave. n. to Rountree Ave...	1,421
Bloor St.....	South	" Alhambra Ave. 174 ft. east.....	222
Bloor St.	South	" Alhambra Ave. 184 ft. west.....	202
Boler Ave.....	West.....	" Maria St. 189 ft. north.....	207
Boon Ave.....	West.....	" 12 ft. n. of St. Clair Ave. to 121 ft. n. of Ascot.....	943
Boothroyd Ave....	West.....	" Boultbee Ave. 267 ft. north	314
Boston Ave.....	East.	" Queen St. 1376 ft. north.....	1,397
Bowden Ave.....	West.....	" 195 ft. south of Wolfrey, 172 ft. south to Hogarth..... ...	172
Bowden Ave.....	West	" 48 ft. n. of Dearbourne, 84 ft. north.	84
Bracken Ave.....	North	" Kingswood Ave. 114 ft. west	132
Bracondale Ave...	East.....	" Helena Ave. to Alcina Ave.....	360
Brandon Ave	North	" 12 ft. w. of Dufferin St. 303 ft. west.	303
Brandon Ave.....	North	" Campbell Ave. 173 ft. west.....	228
Brock Ave.....	West.....	" 985 ft. n. of Bloor St. 361 ft. north..	361
Brookmount Ave..	West.....	" Queen St. 1074 ft. north.....	1,089
Burgess Ave.....	North	" Woodbine Ave. 731 ft. east.....	779
Caledonia Ave	West.....	" 12 ft. n. of St. Clair Ave. n. to Innes Ave.....	2,104
Campbell Ave.....	West.....	" Paton Rd. 463 ft. south..	511
Campbell Ave... .	West.....	" Davenport Rd. 234 ft. north...	257
Carling Ave.....	East.	" 310 ft. n. of Bloor St. 36 ft. north..	36
Carus Ave	North	" Ossington Ave. 298 ft. east...	349
Cassels Ave.....	North	" Woodbine Ave. 737 ft. east.....	785
Cedar Ave.....	South	" Beech Ave. to Willow Ave....	379
Chandos Ave.....	North	" 12 ft. w. of Dufferin St. 415 ft. west.	415
Colbeck Ave.....	North	" Runnymede Rd. w. to Beresford Ave.	392
College St. Extn ..	North	" Lansdowne Ave. 183 ft. west	194
Columbine Ave....	North	" Woodbine Ave. 125 ft. west.....	173
Conduit St..	North	" 137 ft. e. of Indian Rd. Cres. Extn. to Woodville Ave.....	150
Connaught Ave....	West. ...	" Queen St. s. to Eastern Ave.....	636
Cockburn Ave.....	West.	" 12 in. main Gerrard St. 28 ft. s.	28
Cooper Ave.....	East.	" 11 ft. s. of Kingsley Ave. 230 ft. s. to Brandon Ave.....	230
Coxwell Ave	East.	" 12 in. main Gerrard St. 169 ft. s. to old main.....	169
Coxwell Ave.....	West.	" 12 in. main on Danforth Ave. 30 ft. s.	30
Crawford St.....	West.	" 527 ft. s. of Harbord St. 86 ft. south.	86

SCHEDULE No. 9.—*Continued.*

STATEMENT OF MAINS LAID DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	Length in Feet.
Curzon St.. . ..	East.	From connec. across Sproat Ave.....	45
Curzon St.....	West.	" 436 ft. s. of Myrtle Ave. 89 ft s. to end.	89
Danforth Ave.	South	" connec. across Westlake Ave.....	66
Danforth Ave.	South	At E. City limits connec. to 12 in. main...	48
Dartford Ave.....	North	From Sarah St. 276 ft. west.....	295
Davenport Rd.....	North	" 12 ft. e. of Ossington Ave. e. to 122 ft. e. of Marchmont Rd.	1,154
Davenport Rd.....	North	" Ossington Ave. s., west'rly to Dufferin Street.....	2,673½
Davenport Rd.....	North	" 6 in. main on Greenlaw Ave. 46 ft. e.	49
Deer Park Crescent Extn.	South	" Oriole Rd. 135 ft. east.....	185
Delaware Ave.....	West.	" connec. to 6 in. across Davenport Rd.	36
Devon Ave.....	West.	" Gerrard St. s. to Cassels Ave.	722
Dixon Ave..	North	" Woodbine Ave. to 149 ft. w. of Brookmount.	830
Douglas Drive.....	W. & N...	" Glen Rd. easterly, northerly and easterly to 89 ft. e. of Astley Ave.....	1,691
Dovercourt Rd....	West.	" connec. to 6 in. across Davenport Rd.	35
Drayton Ave	West.	" 12 in. main Danforth Ave. 30 ft. s...	30
Drumsnab Rd.....	North	" Castle Frank Ave. 176 ft. e.....	214
Dufferin St.....	East.	" 12 ft. n. of St. Clair Ave. 2,531 ft. n.	2,531
Dundas St.....	North	" apex of St. John's Rd. 725 ft. w.....	725
Durie St.....	West.	" connec. across Annette St. n. to 12 in. main.....	36
Durie St.....	West.	" 12 in. main on Annette St. 30 ft. n..	30
DuVernet Ave.....	North	" Woodbine Ave. 547 ft. e.....	595
Edgewood Crest...	West.	" Summerhill Ave. n. and around the Island at the north end.....	572
Eleanor Ave.....	S. & W. ..	" Oakwood Ave. w. & n. to Rosemount Ave.....	859
Enderby Rd.....	West	" Gerrard St. to Swanwick Ave.....	655
Erie Terrace.....	East.	" 12-in. main on Danforth Ave. 30 ft. south	30
Erie Terrace.....	East.	" 12 ft. n. of Gerrard St. 506 ft. n....	506
Ernest Ave.	South	" Perth Ave. 125 ft. east	173
Esplanade St.	South	" Frederick St. 252 ft w. (s. of C.P.R.)	252
Evans Ave.....	West.	" 12-in. main on Annette St. 60 ft. s..	60
Evelyn Cres.....	N. and E.	" Evelyn Ave. e. and s. to Glendonwynne Rd.....	625
Fairview Ave.	West	" 391 ft. s. of Annette St. 204 ft. s. to old main.	204
Fern Ave	North	" connec. at Sunnyside Ave.....	15
Garden Ave	North	" Glendale Ave. 342 ft. w. to Ridley Gardens.....	342
Gertrude Pl.....	North	" Pape Ave. 300 ft. e. to end.....	348
Gillespie Ave.	West.	" Davenport Rd. 711 ft. north.....	724
Gilmour Ave.....	West	" Annette St. 207 ft. south	254
Glen Road.....	West	" Summerhill Ave. 716 ft. north.	734

SCHEDULE No. 9.—*Continued.*

STATEMENT OF MAINS LAID DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	Length in Feet.
Glen Road	West	From Roxboro' St. e. north to Summerhill Ave	837
Glendale Ave.	West	" 550 ft. s. of Wright Ave. 156 ft. s.	156
Gledhill Ave	East.	" 12-in main on Danforth Ave. 64 ft. n.	64
Glendonwynne Rd	North	" connec. across Evelyn Cres	56
Golfview Ave.	West	" Gerrard St. s. to Cassels Ave	829
Goodwood Ave	North	" Dufferin St. 669 ft. west	716
Gothic Ave.	West	" Quebec Ave. w. and s. 1,095 ft	1,106
Grandview Ave.	North	" Hampton Ave. 152 ft. e. to old main	200
Greenlaw Ave.	East.	" Ashburnam Ave. 286 ft. s. to Davenport Road	354
Hager Ave	West	" 12 ft. n. of St. Clair Ave. 310 ft. n.	310
Hambly Ave	West	" 197 ft. n. of Queen St. n. to Williamson Road	949
Hammersmith Ave	West	" 160 ft. n. of Queen St. 134 ft. n. to Isleworth Ave	134
Harbord St	North	" 126 ft. w. of Crawford St. 60 ft. w.	60
Helena Ave	North	" Connec. to 6-in. Bracondale Extn.	31
Hendrick Ave	West	" 12 ft. s. of St. Clair Ave. 645 ft. s.	645
Herbert St	West	" 12-in. main Annette St. 30 ft. n.	30
Herman Ave	West	" 149 ft. n. of Ritchie Ave. 197 ft. n.	197
Heyworth Cres	W. & S.	" 12 ft. n. of Kingston Rd. n. and w. to Woodbine Ave	540
Hiawatha Ave	West	" Applegrove Ave. 1,000 ft. n.	1,018
Hibernia Ave	North	" Laughton Rd. 206 ft. e.	254
Hillingdon Ave	West	" 12-in. main on Danforth Ave. 30 ft. s.	30
Hillsview Ave	North	" Mavety Ave. 50 ft. w.	68
Hilton Ave	West	" Nina St. 327 ft. n.	345
Howick Ave	North	" Silverthorne Ave. to Blackthorne	473
Humberside Ave	North	" 14 ft. e. of Medland St. to 220 ft. w. of Pacific Ave	720
Humberside Ave	North	" Indian Road Cres. to Woodville Ave.	338
Indian Rd	East	" 150 ft. s. of Garden Ave. 407 ft. s.	407
Indian Rd. Cres	North	" 615 ft. s. of Central Ave. 90 ft. s.-e.	96
Innes Avenue	South	" Caledonia Ave. 542 ft. e.	572
Ilford Avenue	North	" Arlington Ave. 300 ft. e.	350
Isleworth Ave	South	" 43 ft. w. of Hammersmith Ave. to 298 ft. e. of Hammersmith	381
Ivy Avenue	South	" Greenwoods Avenue 818 ft. west	828
Jennings Ave	North	" Clendennan Ave. 290 ft. w.	306
Jones Ave	West	" 1,009 ft. n. of Queen 300 ft. n. to Doel Ave	300
Juniper Ave	North	" Lee Ave. w. to Bellefair Ave	518
Keele Street	East	" Garden Ave. 577 ft. south.	625
Keele St	West	" Bloor St. to 737 ft. n. of Conduit St. to old main	2,162
Keele St	East	" 171 ft. n. of Wright Ave. to 94 ft. s. of Wright Ave	329
Keele St	East	" 459 ft. n. of Howard Pk. Ave. 73 ft. n.	73
Kenilworth Ave.	East	" 12 ft. s. of Kingston Rd. 1,246 ft. s.	1,246

SCHEDULE No. 9.—*Continued.*

STATEMENT OF MAINS LAID DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	Length in Feet.
Kingswood Ave.	West	From 450 ft. n. of Queen St. 155 ft. n.	155
Kingswood Ave.	West	" Kingston Rd. 1,884 ft. south	1,902
Laburnam Ave.	North	" 475 ft. e. of Dowling Ave. 110 ft. e.	110
Lamb Ave.	West	" 12 in. main on Danforth Ave. 30 ft. s.	30
Lansdowne Ave.	West	" St. Clair Ave. 1,406 ft. south	1,452
Lappin Ave.	North	" 75 ft. w. of Lansdowne Ave. w. to Ward St.	219
Laughton Rd.	West	" Davenport Rd. 423 ft. north	450
Lawlor Ave.	West	" 12 in. main on Gerrard St. 21 ft. s.	21
Lawlor Ave.	West	" connec. between 12 in. and 6 in. mains	41
Lawton Rd.	West	" Gormley Ave. 120 ft. north	122
Laxton Ave.	South	" Dowling Ave. 126 ft. e. to old main.	172
Lee Ave.	West	" 197 ft. n. of Queen, 1,647 ft. north to main.	1,647
Leslie St.	West	" 113 ft. n. of Queen Victoria Ave. 48 ft. north	48
Logan Ave.	West	" Wolfrey Ave. 225 ft. n. to old main.	225
Lowther Ave.	South	" 128 ft. e. of Madison Ave. to Huron St.	136
Lumbervale Ave.	North	" Lansdowne Ave. to St. Helens Ave.	299
McLean Ave.	East	" Queen St. 713 ft. north	731
McRoberts Ave.	West	" 12 ft. n of St. Clair Ave. n. to Innes Ave.	2,121
Mackay Ave.	North	" 12 ft. w. of Dufferin St. to 463 ft. w. of Elmwood Ave.	1,157
Macauley Ave.	North	" 533 ft. w. of Perth Ave. 194 ft. w.	194
Madison Ave.	East	" Davenport Rd. 406 ft. south	446
Maher Ave.	North	" Connec. to Runnymede Rd.	36
Mallon Ave.	South	" Bertmount Ave. 316 ft. east	364
Marchmont Rd.	N. & W.	" Shaw St. e. and n. to Davenport Rd.	753
Maria St.	North	" Clendennan Ave. w. to St. John's Pl.	661
Marshall St.	South	" Sheridan Ave. 140 ft. w. to old main	152
Mavety Ave.	West	" Connec. to Hillview Ave.	20
Medland St	West	" 600 ft. s. of Annette St. 133 ft. s.	133
Medland Cres.	West	" Humberside Ave. 250 ft. s.	301
Minto St.	North	" 150 ft. w. of Colina Ave. 98 ft. w.	98
Montrose Ave.	East	" 226 ft. s. of Harbord St. 65 ft. s.	65
Morley Ave.	East	" Applegrove Ave. 1,312 ft. n.	1,330
Morton Rd.	West	" 12 in. main Gerrard St. 23 ft. south and 67 ft. north	90
Mount Stephen St.	North	" Hamilton St. 93 ft. east	108
Murray St.	West	" 12-in. main on Annette St. 30 ft. n.	30
Neville Park Blvd.	West	" 12 ft. s. of Queen St. 346 ft. south	346
Northlands Rd.	South	" 12-in. main on Weston Rd. s. 64 ft. w.	64
Norway Place	North	" Woodbine Ave. 308 ft. east	326
Norwood Rd.	West	" Swanwick Ave. n. to 445 ft. n. of Gerrard St.	1,151
Oakwood Ave.	West	" 12 ft. s. of St. Clair Ave. 1,253 ft. s.	1,253
Pacific Ave.	West	" 958 ft. s. of Conduit St. 202 ft. s.	202
Pape Ave.	West	" 810 ft. n. of Danforth Rd. 598 ft. n.	598

SCHEDULE No. 9—*Continued.*

STATEMENT OF MAINS LAID DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	Length in Feet.
Pauline Ave.....	West	From Bloor St. 995 ft. n. to Ada St. 6-in. main	1,045
Playter Cres.....	South	" Ellerbeok Ave. e. to Jackman Ave..	1,028
Pleasant Blvd.....	North	" 630 ft. e. of Yonge St. e. to Avoca Ave.	650
Peel Ave.	West	" 12-in. main on Annette St. 30 ft. n..	30
Pendrith Ave.	South	" Shaw St. 224 ft. east.....	296
Peterboro' Ave....	North	" 12 ft. w. of Dufferin St. 1,166 ft. w..	1,166
Prescott Ave.....	West.	" Rockwell Ave. n. to Rountree Ave..	1,422
Pretoria Ave.....	North	" Don Mills Rd. to Ellerbeck Ave....	351
Pretoria Ave.....	North	" Don Mills Rd. w. to Sarah St.....	330
Rainsford Rd.	West.	" Queen St. n. to 215 ft. n. of Dixon Ave..	871
Redwood Ave.	West.	" 880 ft. n. of Gerrard n. to Vernon Ave..	267
Regal Rd.	North	" 12 ft. e. of Dufferin St.—Westmount Ave..	243
Rhodes Ave.....	West.	" 12 in. main Danforth Ave. 30 ft. s..	30
Richard Ave.....	North	" Greenwood Ave. 305 ft. e.....	361
Richmond St.	S. & N....	" 250 ft. w. of Peter St. to 126 ft. w., thence 42½ ft. across the street and 163 ft. w. therefrom.	340½
Ridley Gardens. ..	West.	" Garden Ave. 374 ft. north.....	392
Roblock Ave. ...	West.	" Irene Place 379 ft. north.	386
Rockwell Ave.	North	" Silverthorne Ave. to Prescott Ave. .	776
Roxboro' St. E....	East.....	" 200 ft. n. of Binscarth Rd. n. 518 ft. to old main.	518
Royce Ave.....	North	" 138 ft. w. of Emerson Ave. 112 ft. w. to St. Clarens Ave.....	112
Runnymede Rd. ..	West.	" 134 ft. s. of Maher Ave. to 150 ft. n.	350
Runnymede Rd. ..	West.	" Vernon Ave. 116 ft. north..... .	134
Rusholme Pk. Cres	E. & S....	" College St. 456 ft. south and from Rusholme Rd. 397 ft. west.	949
Rushton Rd.....	West.	" Tyrrell Ave. n. to Ilford Ave.	300
Russell Hill Rd. ..	West.	" Lonsdale Ave. Extn. 144 ft. n.....	144
Ryding Ave.....	North	" 12 ft. e. of Runnymede Rd. 2,345 ft. e. to old main.	2,345
St. Andrew's Gardens (E. Wing).	North	" Exten. on e. wing to Glen Rd.....	280¾
St. John's Rd.	North	" Runnymede Rd. 157 ft. w. (County).	157
St. John's Rd.	North	" Crossing Runnymede Rd.....	75
St. John's Place...	West.	" Dundas St. to Maria St.....	389
St. Clarens Ave. ..	West.	" 12 ft. s. of St. Clair Ave. 1,353 ft. s.	1,353
Salem Ave..	West	" connec. to 6-in. across Davenport Road	35
Sarah St.....	West	" 160 ft. n. of Danforth Rd. to 151 ft. n. of Westmount Ave.....	1,454
Seymour Ave	West	" Boultbee Ave. 1,022 ft. north.....	1,069
Shaw St.....	West	" 12 ft. s. of St. Clair Ave. s. to Tyrrell Ave.....	1,256

SCHEDULE No. 9.—*Continued.*

STATEMENT OF MAINS LAID DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	Length in Feet.
Shaw St.....	West	From 80 ft. s. of Essex St. 90 ft. south.....	90
Shaw St.....	West	" Davenport Rd. 411 ft. south.....	458
Shaw St.	West	" extn. north to Pendrith Ave.... ...	31
Shudell Ave	North	" Condor Ave. 121 ft. w. to old main	139
Silver Birch Ave..	West	" 515 ft. n. of Queen 545 ft. n. to old main	545
Silverthorne Ave..	East.	" St. Clair Ave. n. to Rockwell Ave..	1,137
Silverthorne Ave..	West	" Rockwell Ave. n. to Rountree Ave..	1,423
Somerset Ave	West ...	" connec. to 6-in. across Davenport Road	38
Spears Ave.	West . ..	" 12-in. main Annette St. 60 ft. south	60
Sproatt Ave	North	" 320 ft. e. of Jones Ave. 256 ft. east	256
Standish Ave.	West	" Douglas Drive n. to Astley Ave	821
Summerhill Ave ..	North	" Glen Road e. to Douglas Drive....	575
Summerhill Grdns	N.W.	" Summerhill Ave. w., n. and s. round the Crescent to Summerhill and Shaftesbury Aves. 6 in. main....	1,368
Sunnyside Ave....	East.	" Wright Ave. 113 ft. north.....	113
Sunnyside Ave....	East.	" 104 ft. n. of Garden Ave. 190 ft. n. to Fern Ave	190
Temple Ave	South	" Dufferin St. to Tyndall Ave.....	494
Thorburn Ave	North	" Dufferin St. to Tyndall Ave.....	530
Tomlin Ave	North	" Woodbine Ave. 438 ft. east..	486
Uxbridge Ave	West	" Davenport Rd. 564 ft. north	588
Vernon Ave..	North	" Gilmour Ave. to Runnymede Rd..	727
Wallace Ave.....	North	" Perth Ave. 132 ft. east....	174
Ward St.....	West	" Lappin Ave. 102 ft. s. to old pipe..	150
Western Ave.	West	" Humberside Ave. to Brighton Ave...	427
Westmount Ave...	West	" Regal Rd. 848 ft. north	866
Westmount Ave...	North	" Sarah St. 508 ft. west	526
Westlake Ave.....	East	" Danforth Ave. 308 ft. south.....	326
Wheeler Ave.....	West	" 1,240 ft. n. of Queen St. 207 ft. n. ..	207
Willard Ave.... ..	West .. .	" 12 in. main Annette St. 60 ft. s.....	60
Williamson Rd. ..	North	" connec. across Lee Ave.	21
Windermere Ave..	West	" 12 in. main Annette St. 60 ft. s.....	60
Withrow Ave.	North	" 121 ft. e. of Pape Ave. 303 ft. e.....	303
Wolfrey Ave.	South	" 51 ft. e. of Bowden Ave. 120 ft. e. ..	120
Woodbine Ave.....	West	" Gerrard St. 70 ft. north	70
Woodbine Ave.....	West	" Gerrard St. south to Kingston Rd..	2,580
Woodbine Ave.....	West	" Danforth Ave. 1,223 ft. south	1,241
Woodbine Ave.....	East	" Hartford Pl. north to Kingston Rd..	834
Woodlee Ave.....	West	" Gerrard St. 302 ft. north	355
Woodville Ave.....	East	" Conduit St. 602 ft. south	644
Woodville Ave.....	West	" 436 ft. s. of Annette St. 133 ft. s. to Humberside Ave.....	133
Woodycrest Ave...	West	" Danforth Ave. 1,398½ ft. north	1,440
Wright Ave.	North	" connec. to Keele St. 6 in. main	14

SCHEDULE No. 9—*Continued.*

STATEMENT OF MAINS LAID DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	Length in Feet.
Kingston Rd. (In County).	North	From Victoria Pk. Ave. 2,921 ft. east to Hunt Club	2,921
			128,483¼
4-IN. SUB-MAINS:			
Cariboo Ave.....	North	" Osler Ave. 292 ft. west	310
Gibson Ave.	North	" 369 ft. w. of Yonge St. 148 ft. w....	148
Hanover Pl.	East	" Queen St. 298 ft. north.....	313
Harbord St.	North	" Montrose Ave. 102 ft. east	120
Hickson Ave.....	North	" Brock Ave. 127 ft. west.....	145
Sarnia Ave.	South	" Campbell Ave. 303 ft. e. to railway..	353
Severn St.	North	" 70 ft. w. of Rosedale Valley Drive, 281 ft. west	281
Victor Ave.	South	" 157 ft. east of Logan Ave. 72 ft. e...	72
			1,742

MAINS LAID ON PRIVATE AND OTHER PROPERTY.

Street, Avenue, etc.	Side of Street.	Location.	Length in Feet.
12-IN. MAINS:			
Parliament Bldg..	West	From 12-in. main at north-west corner to 8-in. main in front of building....	398
8-IN. MAINS:			
Parliament Bldg..	E. & S. ..	" 532 ft. on east side of building and 635 ft. on south side of building..	1,167
6-IN. MAINS:			
Exhibition Gds. ..	W. & S. ..	" 8-in. main south of Manufacturers' Building, 166 ft. south on west side of new Women's Building, and 198 ft. on south side of same	364
Do. (Dominion St.)	North	" 50 ft. east of Spencer Ave. 746 ft. east to old main.....	746
Sorauren Av., Lane off east side.	South	" Sorauren Ave. 357 ft. east.....	402
			1,512
4-IN. MAINS:			
High Park.....	.....	" Extension of existing 4-in. main 1,008 ft. south-west	1,008

SCHEDULE No. 9.—*Continued.*

Mains throughout the City of all Sizes and Descriptions, including those on Streets, Government, Private and other Property, at the end of the Year 1911.

Size.	Total length in feet in use at end of 1910.	Put in during 1911.	Taken out or abandoned during 1911.	Total length in feet in use at the end of the year 1911.
36 inch Mains	19,725¼	.....	.....	19,725¼
30-inch "	11,242	.....	.....	11,242
24-inch "	34,009	.....	.....	34,009
20-inch "	29,048	.....	.....	29,048
16-inch "	11,217¾	11,142	.....	22,359¾
12-inch Sub-Mains	383,086¾	33,890	.....	416,976¾
10-inch "	19,835	.....	.....	19,835
8-inch "	10,538½	1,167	.....	11,705½
6-inch "	1,489,687½	129,995¼	.....	1,619,682¾
4-inch "	81,523	2,750	.....	84,273
3-inch "	9,764½	.....	.....	9,764½
2-inch and 1-inch Service Mains	5,943½	.....	.....	5,943½
Old 8 inch Cast Iron Mains	6,085	.....	.....	6,085
	2,111,705¾	178,944¼	.....	2,290,650

Total length in use at end of year 1911, 2,290,650 feet, or 433.835 miles.

SCHEDULE No. 10.

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.
Alvin Ave	West	522½ feet north of St. Clair Ave., 3-way.
Annette St.	North	291 feet west of Runnymede Rd., 2 "
"	"	Opposite Durie St. (S.) 3-way.
"	"	9 feet west of Murray St., 3-way.
"	"	7 feet west of Herbert Ave. (N.) 3-way.
"	"	76 feet east of Spears Ave., 2 "
"	"	16 feet east of Jane St., 3 "
Applegrove Ave.	"	17 feet west of Hiawatha Ave., 3 "
Ascot Ave	"	299 feet west of Dufferin St., 3 "
"	"	216 feet east of Boon Ave., 3 "
"	"	189 feet west of " 3 "
"	"	143 feet west of Earlscourt Ave., 3 "
"	"	121 feet west of Nairn Ave., 3 "
Ashburnham Ave.	"	194 feet east of Greenlaw Ave. (s. jog), 3-way.
"	"	8 feet east of Elmwood Ave., 3 way.
"	"	335 " " " 3 "
Astley Ave	West	303 feet north of Douglas Drive, 3 "
"	"	593 " " " 3 "
"	"	996 " " " 3 "
Bain Ave	North	651 feet east of Broadview Ave., 3 "
"	"	1,105 " " " 3 "
Balsam Ave	South	244 feet east of Beech Ave., 3 "
Barber St	West	123 feet north of Annette St., 2 "
"	"	295 feet south of Maher Ave., 3 "
Bathurst St	East.	349 feet south of St. Clair Ave., 2 "
"	West	128 feet south of Nina St., 3 "
Bedford Road	"	48 feet south of Dupont St., 3 "
Benson Ave	North	310 feet north of Christie St., 3 "
Beresford Ave	West	303 feet north of Colbeck Ave., 3 "
"	"	303 feet south of Annette St., 3 "
"	"	630 feet " " 3 "
Bertmount Ave.	"	106 feet south of Mallon Ave., 3 "
Bird Ave.	North	196 feet west of Dufferin St., 3 "
"	"	498 " " " 3 "
"	"	150 feet west of Elmwood Ave., 3-way.
"	"	450 " " " 3 "
Blackthorne Ave	West	South-west cor. of Howick Ave., 3 "
"	"	393 feet south of " 3 "
"	"	303 feet north of Rockwell Ave., 3 "
"	"	630 " " " 3 "
"	"	374 feet south of Rountree Ave., 3 "
"	"	25 " " " 3 "
Boon Ave	"	298 feet north of St. Clair Ave., 3 "
"	"	601 " " " 3 "
"	"	106 feet north of Ascot Ave., 3 "
Boothroyd Ave.	"	265 feet north of Boultbee Ave., 3 "
Boston Ave	East	206 feet north of Queen St., 2 "
"	"	503 " " " 2 "
"	"	806 " " " 2 "
"	"	1,099 " " " 2 "
"	"	1,373 " " " 2 "

SCHEDULE No. 10.—*Continued.*

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.
Brandon Ave.	North	312 feet west of Dufferin St., 3-way.
Brock Ave	West	1,284 feet north of Bloor St., 3 "
Brookmount Ave	"	351 feet north of Queen St.. 3 "
"	"	107 feet north of Dixon Ave., 3 "
"	"	418 " " " 3 "
Burgess Ave	North	350 feet east of Woodbine Ave., 3-way.
"	"	716 " " " 3 "
Caledonia Ave	West	270 feet north of St. Clair Ave., 3 "
"	"	2 feet north of Lambert Ave., 3 "
"	"	3 feet north of Norman Ave., 3 "
"	"	290 " " " 3 "
"	"	593 " " " 3 "
"	"	281 feet south of Innes Ave., 3 "
"	"	15 " " " 3 "
Campbell Ave	"	150 feet south of Paton Road, 3 "
"	"	460 " " " 3 "
"	"	207 feet north of Davenport Rd., 3 "
Cariboo Ave	North	290 feet west of Osler Ave., 3 "
Carus Ave	"	296 feet east of Ossington Ave., 2 "
Cassels Ave	"	51 feet east of Devon Ave., 3 "
"	"	112 feet east of Golfview Ave., 3 "
Chandos Ave	"	400 feet west of Dufferin St., 3 "
Cherry St	East	220 feet south of Mills St., 3 "
"	"	931 " " " 3 "
"	"	1,309 " " " 3 "
Coady Ave	West	303 feet north of Queen St., 3 "
"	"	606 " " " 3 "
"	"	897 " " " 3 "
Colbeck Ave	North	299 feet west of Runnymede Rd., 3 "
Connaught Ave.	West	276 feet south of Queen St., 2 "
Cooper Ave.	East	Opposite Brandon Ave., 3-way.
Coxwell Ave	West	305 feet north of Gerrard St. jog to west, 3-way.
"	"	596 " " " " " "
Danforth Ave	South	26 feet east of Lamb Ave., 3-way.
"	"	178 feet west of Ashdale Ave., 3 "
"	"	7 feet east of Erie Terrace, 3 "
"	"	35 feet east of Rhodes Ave., 3 "
"	"	61½ feet east of Coxwell Ave., 3 "
"	"	426½ feet east of Coxwell Ave., 3 "
"	"	111 feet east of Bastedo Ave., 2 "
"	"	413 feet west of Woodbine Ave., 2 "
"	"	61 " " 3 "
"	"	172 feet east of Woodbine Ave., 3 "
"	"	11 feet west of Gledhill Ave., 3 "
"	"	263 feet west of Westlake Ave., 2 "
"	"	348 feet east of Barrington Ave., 3 "
"	"	87 feet west of Kelvin Ave., 3 "
Dartford Ave.	North	273 feet west of Sarah St., 3 "
Davenport Rd.	"	175 feet west of Salem Ave., 2 "
"	"	136 feet east of Dufferin St., 3 "
"	"	253 feet east of Ossington Ave., n., 3 "

SCHEDULE No. 10.—*Continued.*

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	
Davenport Rd.	North	51 feet east of Shaw St.,	3-way.
"	"	116 feet west of Marchmont Rd.,	3 "
"	"	119 feet east of Marchmont Rd.,	2 "
"	"	19 feet east of Greenlaw Ave.,	3 "
Deer Park Cres.	South	86 feet east of Oriole Rd.,	3 "
Devon Ave.	West	350 feet north of Cassells Ave.,	3 "
"	"	15 feet south of Gerrard St.,	2 "
Dixon Ave.	North	147 feet west of Brookmount Ave.,	3 "
Douglas Drive	"	127 feet west of Standish Ave.,	2 "
"	"	181 feet east of Standish Ave.,	2 "
"	"	86 feet east of Astley Ave.,	3 "
"	"	206 feet east of Glen Rd.,	3 "
"	"	296 feet south of Summerhill Ave.,	3 "
Dufferin St.	East.	306 feet north of St. Clair Ave.,	3 "
"	"	609 " "	3 "
"	"	948 " "	3 "
"	"	456 feet north of Ascot Ave.,	2 "
"	"	596 feet north of Goodwood Ave.,	3 "
"	"	711 " "	3 "
"	"	711 feet north of Goodwood Ave.,	3-way.
"	"	189 feet south of Morrison Ave.,	2 "
"	"	74 feet north of "	3 "
Duvernet Ave	North	254 feet east of Woodbine Ave.,	3 "
"	"	545 " " "	3 "
Edgewood Cres.	West	184 feet north of Summerhill Ave.,	3 "
"	North	441 " " "	3 "
Eleanor Ave.	South	340 feet west of Oakwood Ave.,	2 "
"	West	138 feet south of Rosemount Ave.,	2 "
Enderby Rd.	"	301 feet north of Gerrard St.,	3 "
Erie Terrace	East	326 " " "	3 "
Esplanade St.	South	250 feet west of Frederick St.,	3 "
Evelyn Cres.	North	24 feet east of Evelyn Ave.,	3 "
"	East	331 " " "	3 "
Gerrard St. East	South	10 feet west of Victoria Park Ave.,	2 "
"	"	42 feet west of Cockburn Ave.,	3 "
"	"	170 feet west of Main Street,	3 "
"	"	23 feet west of Morton Road,	3 "
"	"	330 feet east of Coxwell Ave.,	3 "
"	"	657 " " "	3 "
Gertrude Place.	North	297 feet east of Pape Avenue,	3 "
Gibson Ave	"	423 feet east of Woodbine Ave.,	3 "
Gillespie Ave.	West	14 feet north of Davenport Road,	3 "
"	"	350 " " " "	3 "
"	"	708 " " " "	3 "
Glen Road	"	165 feet north of E. Roxboro' St.,	3 "
"	"	77 feet north of Douglas Drive,	3 "
"	"	21 feet south of Summerhill Ave.,	3 "
Glen Rd. North.	"	302 feet north of " "	3 "
"	"	713 " " " "	3 "
Golfview Ave.	"	178 feet north of Cassels Ave.,	3 "
"	"	457 " " "	3 "

SCHEDULE No. 10.—*Continued.*

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	
Golfview Ave.	West	14 feet south of Gerrard St.,	3-way.
Goodwood Ave.	North	299 feet west of Dufferin St.,	3 "
"	"	667 " " "	3 "
Gothic Ave.	N.W.	300 feet west of Quebec Ave.,	3 "
"	West	602 " " "	3 "
"	"	898 feet south-west Quebec Ave.,	3 "
"	"	1,093 " " "	3 "
Hager Ave.	"	320 feet north of St. Clair Ave.,	3 "
Hamboly Ave.	"	511 feet north of Queen St.,	3 "
"	"	802 " " "	3 "
"	"	11 feet south of Williamson Rd.,	3 "
Hanover Place	East	298 feet north of Queen St.,	3 "
Herman Ave.	West	334 feet north of Ritchie Ave.,	2 "
Hendrick St.	"	291 feet south of St. Clair Ave.,	3 "
"	"	655 " " "	3 "
Heyworth Cres.	South	At bend in street,	3 "
Hiawatha Ave.	West	303 feet north of Applegrove Ave.,	3 "
"	"	593 " " "	3 "
"	"	902 " " "	3 "
Hibernia Ave.	North	196 feet east of Laughton Rd.,	3 "
Hilton Ave.	West	325 feet north of Nina St.,	3 "
Humberside Ave.	North	25 feet east of Aziel Ave.,	3 "
"	"	216 feet west of Indian Rd. Cr.,	3 "
Ilford Rd.	"	300 feet east of Arlington Ave.,	3 "
Indian Rd.	East	494 feet south of Garden Ave.,	3 "
Innes Ave.	South	236 feet west of Caledonia Ave.,	3 "
"	"	199 feet west of Gilbert Ave.,	3 "
Isleworth Ave.	"	7 feet east of Hammersmith Ave.,	3 "
"	"	274 " " "	3 "
Ivy Ave	"	202 feet west of Greenwood Ave.,	3 "
"	"	507 " " "	3 "
"	"	103 feet west of Prust Ave.,	3 "
Jones Ave.	West	1,036 feet north of Queen St.,	3 "
Juniper Ave.	North	200 feet west of Lee Ave.,	3 "
"	"	Opp. Bellefair Ave.,	3 "
Kenilworth Ave.	East	337 feet south of Kingston Rd.,	3 "
"	"	550 " "	3 "
"	"	882 " "	3 "
"	"	1,246 " "	3 "
Keeele St.	West	50 feet north of Bloor St.,	3 "
"	"	353 " "	3 "
"	"	658 " "	3 "
"	"	90 feet south of Conduit St. (w. jog),	3 "
"	"	206 feet north of Conduit St.,	3 "
"	"	521 " "	3 "
"	"	814 " "	3 "
"	"	322 feet south of Garden Ave.,	3 "
Kingswood Ave.	"	587 feet north of Queen St.,	3 "
"	"	254 feet south of Kingston Rd.,	3 "
"	"	545 " "	3 "
"	"	837 " "	3 "

SCHEDULE No. 10.—*Continued.*

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	
Kingswood Ave.	West	251 feet south of Bracken Ave.,	3-way.
"	"	547 " "	3 "
"	"	863 " "	3 "
Lansdowne Ave.	"	15 feet south of St. Clair Ave.,	3 "
"	"	355 " "	3 "
"	"	682 " "	3 "
"	"	1,020 " "	3 "
"	"	1,372 " "	3 "
Lappin Ave.	North	148 feet west of Lansdowne Ave.,	3 "
Laughton Rd.	West	303 feet north of Davenport Rd.,	2 "
Lee Ave	"	543 feet north of Queen St.,	3 "
"	"	219 feet south of Williamson Rd,,	3 "
"	"	27 feet north of Williamson Rd.,	3 "
"	"	342 " " "	3 "
McLean Ave	East	347 feet north of Queen St.,	3 "
"	"	710 " "	3 "
McRoberts Ave.	West	313 feet north of St. Clair Ave.,	3 "
"	"	641 " " "	3 "
"	"	26 feet north of Norman Ave.,	3 "
"	"	322 " " "	3 "
"	"	625 " " "	3 "
"	"	249 feet south of Innes Ave.,	3 "
Macauley Ave.	North	725 feet west of Perth Ave..	3 "
Mackay Ave	"	181 feet west of Dufferin St.,	3 "
"	"	484 " " "	3 "
"	"	116 feet west of Elmwood Ave.,	3 "
"	"	460 " " "	3 "
Madison Ave.	East	99 feet south of Davenport Rd.,	3 "
"	"	403½ " " "	3 "
Mallon Ave.	South	127 feet east of Bertmount Ave.,	3 "
Marchmont Rd.	North	207 feet east of Shaw St.,	3 "
"	West	135¼ feet south of Davenport Rd.,	2 "
Maria St.	North	312 feet east of St. John's Rd.,	2 "
Medland Cres.	West	248 feet south of Humberside Ave.,	3 "
Minto St.	North	235 feet west of Colina St.,	3 "
Morley Ave.	East	122 feet north of Applegrove Ave.,	3 "
"	"	425 " " "	3 "
"	"	728 " " "	3 "
"	"	1,030 " " "	3 "
"	"	1,309 " " "	3 "
Neville Pk. Blvd.	West	349 feet south of Queen St.,	3 "
Norway Pl.	North	306 feet east of Woodbine Ave.,	3 "
Norwood Ave.	West	302 feet north of Swanwick Ave.,	3 "
"	"	354 feet north of Gerrard St..	2 "
Oakwood Ave	"	15 feet south of St. Clair Ave.,	3 "
"	"	304 " " "	3 "
"	"	45 feet south of Rosemount Ave.,	3 "
"	"	289 feet north of Eleanor Ave.,	3 "
"	"	Opp. south line of Eleanor Ave.,	3 "
Pape Ave	"	227 feet south of Canning Ave.,	3 "
"	"	106 feet north of "	3 "

SCHEDULE No. 10—*Continued.*

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	
Pauline Ave	West	28 feet north of Bloor Street,	3-way.
"	"	331 " " "	3 "
"	"	656 " " "	2 "
Pendrith Ave.	South	218 feet east of Shaw Street,	3 "
Peterboro Ave	North	25 feet west of Dufferin St.,	2 "
"	"	365 " " "	3 "
"	"	158 feet west of Elmwood Ave.,	2 "
"	"	469 " " "	3 "
Playter Cres	South	219 feet east of Ellerbeck Ave.,	3 "
"	"	90 feet east of Playter Blvd.,	3 "
"	"	16 feet west of Jackman Ave.,	3 "
Pleasant Blvd	North	15 feet west of Avoca Ave.,	2 "
"	"	334 " " "	3 "
Prescott Ave	West	295 feet north of Rockwell Ave.,	3 "
"	"	630 " " "	3 "
"	"	981 " " "	3 "
"	"	24 feet south of Rountree Ave.,	3 "
Rainsford Rd.	"	326 feet north of Queen St.,	3 "
"	"	32 feet north of Dixon Ave.,	3 "
Redwood Ave.	"	12 feet south of Vernon St.,	3 "
Ridley Gardens.	"	55 feet north of Garden Ave.,	3 "
"	"	371 " " "	3 "
Roblocke Ave.	"	376 feet north of Irene Place,	3 "
Rockwell Ave.	North	9 feet east of Blackthorne Ave.,	3 "
Roxboro' St. East.	East	Opp. Whitney Ave.,	3 "
Rusholme Pk. Cres.	South	394 feet west of Rusholme Rd.,	3 "
"	East	198 feet south of College St.,	3 "
Ryding Ave.	North	295 feet east of Runnymede Rd.,	3 "
"	"	603 " "	2 "
"	"	902 " "	3 "
"	"	1,199 " "	2 "
"	"	33 feet east of Cobalt Ave.,	2 "
"	"	352 " "	3 "
"	"	655 " "	3 "
Sarnia Ave.	South	300 feet east of Campbell Ave.,	3 "
St. Clarens Ave.	West	302 feet south of St. Clair Ave.,	2 "
"	"	653 " "	3 "
"	"	1,003 " "	2 "
"	"	1,343 " "	2 "
St. John's Rd.	North	9 feet east of Runnymede Rd.,	3 "
St. John's Pl.	West	87 feet north of Dundas St.,	2 "
Sarah St.	"	182 feet north of Pretoria Ave.,	3 "
"	"	148 feet north of Westmount Ave.,	3 "
"	"	50 feet south of Pretoria Ave.,	3 "
"	"	376 " "	3 "
"	"	727 " "	3 "
Severn St.	North	348 feet west of Rosedale Valley Dr.,	3 "
Seymour Ave.	West	122 feet north of Boultbee Ave.,	3 "
"	"	422 " "	3 "
"	"	4 feet north of Shudell Ave.,	3 "
"	"	300 " "	3 "

SCHEDULE No. 10—*Continued.*

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.
Shaw St.....	West	244 feet north of Tyrrell Ave., 3-way.
"	"	535 " " 3 "
"	"	364 feet south of St. Clair Ave., 3 "
"	"	195 feet south of Davenport Rd., 2 "
Silver Birch Ave....	"	605 feet south of Pine Ave., 3 "
Silverthorne Ave....	East	327 feet north of St. Clair Ave., 3 "
"	"	19 feet south of Howick Ave., 3 "
"	North	North-west cor. of Rockwell Ave , 3 "
"	West	302 feet north of Rockwell Ave., 3 "
"	"	629 " " " 3 "
"	"	381 feet south of Rountree Ave., 3 "
"	"	6 " " " 3 "
Standish Ave.	"	266 feet north of Douglas Drive, 2 "
"	"	569 " " " 2 "
Station Rd., W. Tor.	East	16 feet north of Davenport Road, 3 "
"	"	318 " " " 2 "
Summerhill Gardens	West	325 feet west of Summerhill Ave., 2 "
"	"	663 feet north-east of Summerhill Ave., 2-way.
"	East	243 feet north of Summerhill Ave., 2-way.
Summerhill Ave	North	290 feet east of Glen Road, S., 3 "
Temple Ave.....	South	155 feet east of Tyndall Ave., 3 "
Thorburn Ave.....	"	150 " " " 3 "
Uxbridge Ave.	West	274 feet north of Davenport Road, 3 "
"	"	561 " " " 3 "
Vernon Ave	North	355 feet west of Gilmour Ave., 3 "
Westmount Ave.....	"	299 feet west of Sarah Street, 3 "
"	"	505 " " " 3 "
"	West	14 feet north of Regal Road, 3 "
"	"	305 " " " 3 "
"	"	608 " " " 3 "
Weston Rd., S.....	East	300 feet north of St. Clair (at bend), 3 "
"	"	639 " " " 2 "
"	"	280 feet south of McCormack St., 3 "
"	"	25 feet north of " 2 "
"	"	281 " " " 2 "
"	"	572 " " " 3 "
Weston Rd.	East	7 feet south of Northlands Ave., 2 "
Westlake Ave.	"	303 feet south of Danforth Ave., 2 "
Wilton Ave.....	North	374 feet east of River St., 3 "
Withrow Ave.	"	421 feet east of Pape Ave., 2 "
Woodbine Ave.....	East	46 feet north of Norway Place, 3 "
"	"	345 " " 3 "
"	West	374 feet north of Kingston Rd., 3 "
"	East	179 feet north of Heyworth Cres., 3 "
"	West	9 feet north of Gibson Ave., 3 "
"	"	28 feet north of DuVernet Ave., 3 "
"	"	Opp. n. line of Burgess Ave., 3 "
"	"	8 feet north of Cassells Ave., 3 "
"	"	298 " " 3 "
"	"	282 feet south of Danforth Ave., 3 "
"	"	585 " " 3 "

SCHEDULE No. 10—*Continued.*

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.	
Woodbine Ave.....	West	896 feet south of Danforth Ave.,	3-way.
"	"	1,220 " "	3 "
Woodlee Ave.....	"	300 feet north of Gerrard St.,	3 "
Woodville Ave.....	East	8 feet south of Conduit St.,	3 "
"	"	321 " "	3 "
"	"	599 " "	3 "
Woodycrest Ave.....	West	302 feet north of Danforth Ave.,	3 "
"	"	658 " "	3 "
"	"	1,009 " "	3 "
"	"	1,396 " "	2 "
HYDRANTS PLACED ON	PRIVATE PRO	PERTY DURING THE YEAR 1911.	
Exhibition Gr'unds	.....	At new Women's Building,	2 "
"	.....	" "	2 "
Parliament Bldg..	.....	At east side of Building,	3 "
"	.....	" "	3 "
"	.....	At south side of Building,	3 "
"	.....	" "	3 "
Sorauren Ave. (Private Lane).	South	355 feet east of Sorauren Ave.,	3 "
Howland Ave.	.....	At Firehall,	3 "
Ford St.....	.....	"	3 "
Main St., E. Tor..	.....	"	3 "
HYDRANTS REMOVED	FROM OFF THE	STREETS.	
Davenport Rd.....	North	300 feet west of Uxbridge,	2 "
King St. east	South	near west side of Don Bridge,	2 "
Lakeshore Rd.....	North	105 feet east of Indian Rd.,	2 "
"	"	600 " "	2 "
Roxboro' St. east..	"	1,128 feet south of Highlands Ave.,	3 "
Yonge St.	East	South-east corner of King St.,	3 "
3-WAY HYDRANTS REP	LACING 2-WAY	ALREADY IN POSITION.	
Adelaide St. west..	South	230 feet east of Bathurst St.	
" ..	"	100 feet west of Portland St.	
" ..	"	South-west corner of Brant St.	
Bathurst St.....	East	North-east corner of St. Patrick St.	
Brock Ave.	West	North of Florence St.	
Camden Ave.....	North	Between Spadina Ave. and Brant St.	
Carlton St.....	South	South-west corner of Jarvis St.	
Cherry St.....	West	70¾ feet south of Front St.	
Church St.....	"	Between Shuter St. and Wilton Ave.	
Clinton St.....	East	At south-east corner of Bloor St.	
Cottingham St....	South	26 feet east of Poplar Plains Rd.	
Dorset St.	West	At south-west corner of King St.	
Eastern Ave.....	North	1,932 feet east of Knox Ave.	
Givens St.....	West	300 feet north of College St.	
Gladstone Ave.. ..	"	South-west corner of Dundas St.	

SCHEDULE No. 10—*Continued.*

STATEMENT OF HYDRANTS PLACED IN POSITION DURING THE YEAR 1911.

Street, Avenue, etc.	Side of Street.	Location.
Gloucester St.	South	South-east corner of Yonge St.
Hazel Ave.	"	South-west corner of Laurel Ave.
King St.....	North.....	300 feet west of Simcoe St.
Nassau St.	"	North-east corner of Bathurst St.
O'Hara Ave.....	West	At north-west corner of Queen St.
3-WAY HYDRANTS REPLACING 2-WAY ALREADY IN POSITION.		
Ossington Ave ...	West	At south-west corner of College St.
Parliament St.. ..	East	At north-east corner of King St.
Queen St.	South	107 feet east of Kenilworth Ave.
River St.....	East	110 feet south of Wilton Ave.
St. Clarens Ave. ..	West	2,140½ feet south of Bloor.
St. Patrick St.....	North	At north-east corner of Casimer St.
"	"	At north-west corner of Denison Ave.
"	"	At 100 feet west of Carlyle St. (now N.W. Cor.)
"	"	At north-west corner of McCaul St.
Sherbourne St.. ..	West	At north-west corner of Esplanade St.
"	"	Between Gerrard and Carlton Sts.
Spadina Road	"	337 feet south of Davenport Road.
Spruce St	North	Between Parliament and Sackville Sts.
Sullivan St.	South	Between Beverley and Huron Sts.
Water St.	East	Between Mill and Front Sts.
Wilton Ave.	North	At the Fire Hall.
Yonge St.	West	North-west corner of Front St.
3-WAY HYDRANTS REPLACING 2-WAY ON PRIVATE PROPERTY.		
Exhibiti'n Grounds	.....	Opposite Poultry Building (old).
2-WAY HYDRANTS REPLACING 3-WAY ALREADY IN POSITION.		
Bulwer St.....	North	North-west corner of Soho St.
Colborne St.	"	North-east corner of Church St.
Front St.....	"	211¾ feet east of Princess St.
Melinda St.	"	North-west corner of Jordan St.
Victoria St.	East	North-east corner of Queen St.
Ward Ave	West	526 feet north of Wallace Ave.
York St.....	"	34 feet south of Pearl St.

SCHEDULE No. 10—*Continued.*

SUMMARY OF HYDRANTS—1911.

Number of hydrants of all kinds on streets at end of 1910		4,481
Number of hydrants of all kinds on private property, 1910		114
		4,595
There were removed from off the streets, two 3-way hydrants and four 2-way hydrants. Thirty-seven 2-way hydrants were replaced by 3-way hydrants, seven 3-way hydrants were replaced by 2-way hydrants on the streets, and one 2-way hydrant on private property by a 3-way hydrant		51
		4,544
Number of additional hydrants set on streets during 1911		369
Number of additional hydrants set on private property, 1911		7
Thirty-seven 3-way hydrants replacing 2-way hydrants and seven 2-way hydrants replacing 3-way hydrants already on streets, and one on private property		45
	Total	4,965

SCHEDULE No. 11.

TOTAL LIST OF ALL VALVES PLACED IN POSITION DURING THE YEAR 1911, SHOWING THE SIZE, LOCATION, ETC.

Street, Avenue, etc.	Side of Street.	Location.
20-IN. STOP VALVES:		
Yonge Street	East	On 20 in. main just west of 24-in. main.
16-IN. STOP VALVES:		
Yonge St.	West	Opp. north line of Roxborough St.
"	"	4 ft. north of south line of Crescent Rd.
"	"	6 ft. south of south line of Macpherson Ave.
Rosedale Val. Drive	North	24 ft. west of west line of Park Rd.
"	"	North-west pier of Sherbourne St. Bridge.
"	"	1,880 ft. east of Glen Rd. Bridge.
"	"	252 ft. west of railway fence.
Riverdale Park		3 ft. west of west line of Broadview Avenue, opposite Sparkhall Ave
Winchester Drive	South	41 ft. east of subway (C.P.R.)
12-IN. STOP VALVES:		
Annette Street	North	41 ft. west of Keele St.
"	"	West line of Runnymede Rd.
"	"	East line of Murray St.
"	"	East line of Jane St.
Bathurst St.	East	North line of Nina St.
Broadview Ave.	West	North line of Elliott St.
"	"	29 ft. south of north line of Sparkhall Ave.
Cherry St.	East	South line of Front St.
"	"	South line of Tait St. (north of C.P.R.)
"	"	North line of Mill St. (south of C.P.R.)
"	"	390 ft. south of Mill St. (north of G.T.R.)
"	"	640 ft. south of Mill St. (south of G.T.R.)
Coxwell Ave.	West	South line of Gerrard St. east.
"	"	North line of Gerrard St. east.
Danforth Ave.	South	West line of Ashdale Ave.
"	"	East line of Coxwell Ave.
"	"	West line of Coxwell Ave.
"	"	West line of Drayton Ave.
"	"	745 feet east of Bastedo Ave.
"	"	East line of Woodbine Ave.
"	"	West line of Woodbine Ave.
"	"	West line of Morton Rd.
"	"	West line of Main St.
"	"	East line of Main St.
"	"	West line of Dawes Rd.
"	"	East line of Dawes Rd.
"	"	90 feet east of Luttrell Ave., east City limits.
Elliott St.	North	14 feet west of Broadview Ave.
Gerrard St.	South	West line of Victoria Pk. Ave., east City limits.
"	"	East line of Pickering St.
"	"	East line of Wayland Ave.
"	"	West line of Wayland Ave.
"	"	East line of Main St.
"	"	West line of Main St.

SCHEDULE No. 11—*Continued.*

TOTAL LIST OF ALL VALVES PLACED IN POSITION DURING THE YEAR 1911, SHOWING THE SIZE, LOCATION, ETC.

Street, Avenue, etc.	Side of Street.	Location.
Gerrard St.	South	East line of Morton Rd.
"	"	East line of Woodbine Ave.
"	"	West line of Woodbine Ave.
"	"	94 feet east of Conwell Ave.
High Park Ave.	West	South line of Dundas St.
Main St.	East	South line of Danforth Rd.
"	"	North line of Gerrard St.
"	"	633 feet north of Gerrard St. (south of G. T. R.)
"	"	3678 feet north of Gerrard St. (N. of G.T.R.)
Stanton St.	"	North line of Davenport Rd.
Wayland Ave.	"	South line of Gerrard St. (Tower).
Weston Rd., South	"	North line of McCormack St.
"	"	South line of Northlands Ave.
Wilton Ave.	North	East line of River St.
"	"	70 feet east of east parapet of bridge.
8-IN. STOP VALVES:		
Parliament Bldg.	East	On connec. to 6 in. main opp. St. Albans St.
"	"	110 feet south of Buildings.
"	South	108 " " (Library).
"	"	Connec. to 6-in. main at Queen's Park Cres. 512 feet south of St. Albans Ave.
6-IN. STOP VALVES:		
Alcina Ave.	North	East line of Brandondale Ave.
Alhambra Ave.	West	South line of Bloor St.
Amroth Ave.	"	South line of Danforth Ave.
Antler Ave.	North	West line of Campbell Ave.
Ascboumham Ave.	"	East line of Greenlaw Ave., N.
Applegrove Ave.	"	West line of Ashdale Ave.
"	"	East line of Morley Ave.
Ascot Ave.	"	West line of Dufferin St.
Ashdale Ave.	West	South line of Danforth Ave.
Astley Ave.	"	North line of Douglas Drive.
Avoca Ave.	"	396 feet north of Pleasant Blvd.
Balsam Ave.	South	East line of Beech Ave.
Barrett Ave.	West	North line of Edna Ave.
Barber St.	"	North line of Annette St.
"	"	South line of Maber St.
Bastedo Ave.	"	South line of Danforth Ave.
Bathurst St.	East	Between the 12-inch and 6-inch to Nina St.
Bedford Rd.	West	South line of Dupont St.
Beech Ave.	"	North line of Queen St.
"	"	South line of Queen St.
Benlamond Ave.	South	West line of Main St.
Benson Ave.	North	East line of Arlington Ave.
Beresford Ave.	West	North line of Colbeck St.
"	"	South line of Colbeck St.
"	"	South line of Annette St.
Blackthorne Ave.	"	South line of Rockwell Ave.

SCHEDULE No. 11—*Continued.*

TOTAL LIST OF ALL VALVES PLACED IN POSITION DURING THE YEAR 1911, SHOWING THE SIZE, LOCATION, ETC.

Street, Avenue, etc.	Side of Street.	Location.
Blackthorne Ave..	West	North line of Rockwell Ave.
" ..	"	South line of Rountree Ave.
Boler St.....	"	North line of Maria St.
Boothroyd Ave....	"	North line of Boultbee Ave.
Boston Ave.	East	North line of Queen St.
Bowden St.....	West	North line of Hogarth Ave.
Brandon Ave.	North.....	West line of Campbell Ave.
Brookmount Rd...	West	North line of Queen St
Burgess Ave.....	North.....	East line of Woodbine Ave.
Caledonia Ave....	West	South line of Innes Ave.
Campbell Ave.....	"	South line of Paton Rd.
"	"	North line of Davenport Rd.
Cassels Ave.....	North.....	East line of Woodbine Ave.
Carus Ave	"	East line of Ossington Ave.
Cedar Ave.....	South.....	West line of Willow Ave.
"	"	East line of Beech Ave.
Coady Ave.....	West	North line of Queen St.
"	"	South line of Mallon Ave.
Colbeck Ave.....	North.....	West line of Runnymede Rd.
College St.....	"	West line of Lansdowne Ave.
Columbine Ave. ..	North.....	West line of Woodbine Ave.
Connaught Ave. ..	West	South line of Queen St.
" ..	"	North line of Eastern Ave.
Cockburn Ave.....	"	South line of Gerrard St.
Coxwell Ave.....	"	South line of Danforth Avenue.
Curzon St..	East	South line of Sproatt Ave.
Danforth Ave.....	North.....	[illegible] line of Main St.
"	"	32 feet east of Dawes Rd.
"	South.....	West line of Westlake Ave.
"	North.....	West line of Dawes Rd.
"	South.....	North of 12-inch main City limits (connec. to 6-inch main).
Davenport Rd.....	North.....	East line of Dovercourt Rd.
"	"	West line of Dovercourt Rd.
"	South.....	North of 20-inch intersection to 6-inch main at Walmer Rd.
Dawes Road.....	Centre	North of 12-inch main (intersection
"	West	15 feet north of Danforth Ave.
Deer Pk. Cres. Ex.	South.....	East line of Oriole Rd.
Devon Road.....	West	South line of Gerrard St.
"	"	North line of Cassels Ave.
Dixon Ave.....	North.....	West line of Woodbine Ave.
Dominion St.....	"	5 feet east of hydrant in front of Kennedy's house.
Don Mills Rd.....	West	South line of Pretoria Ave.
Douglas Drive....	North.....	East line of Glen Rd.
Dovercourt Rd....	West	North line of Van Horne St.
Drumsnab Rd.....	North.....	East line of Castle Frank Ave.
Douglas Drive....	"	East line of Standish Ave.
"	West	South line of Summerhill Ave.

SCHEDULE No. 11—*Continued.*

TOTAL LIST OF ALL VALVES PLACED IN POSITION DURING THE YEAR 1911, SHOWING THE SIZE, LOCATION, ETC.

Street, Avenue, etc.	Side of Street.	Location.
Drayton Ave.....	West	South line of Danforth Ave.
DuVernet Ave	North	East line of Woodbine Ave.
Dundas St.....	North	86 feet west of hydrant at apex of Dundas St. and St. Johns Rd.
Durie St.....	West	North line of Annette St.
Edgewood Cres. ..	"	North line of Summerhill Ave.
Eleanor Ave.....	South	West line of Oakwood Ave.
"	West	South line of Rosemount Ave.
Ellerbeck Ave	"	North line of Pretoria Ave.
Enderby Ave.	"	South line of Gerrard St.
"	"	North line of Swanwick Ave.
Erie Terrace.....	East	South line of Danforth Ave.
Ernest Ave.	South	On west side of Perth Ave. (pressure valve).
Evans Ave.....	West	South line of Annette St.
Evelyn Cres.....	East	North line of Glendonwynne Rd.
"	North	East line of Evelyn Ave.
Evelyn Ave.....	West	North line of Evelyn Cres. (opposite).
Exhibiti'n Grounds		South of Manufacturers Building 28 feet west of new Women's Building.
Fern Ave.	North	East line of Sunnyside Ave.
Gerrard St.....	"	East line of Morton Road.
Gertrude Place....	"	East line of Pape Ave.
Gillespie Ave.....	West	North line of Davenport Rd.
Gilmour Ave.....	"	South line of Annette St.
Gledhill Ave.....	East	North line of Danforth Ave.
Glen Road.....	West	North line of East Roxboro' St.
"	"	South line of Summerhill Ave.
"	"	North " "
Golfview Ave.	"	South line of Gerrard St.
"	"	North line of Cassels Ave.
Goodwood Ave....	North	West line of Dufferin St.
Gothic Ave.	"	West line of Quebec Ave.
Grandview Ave. ..	"	East line of Hampton Ave.
Greenlaw Ave.....	East	South line of Ashburnham Ave.
"	"	North line of Davenport Rd.
Hambly Ave.....	West	South line of Williamson Rd.
Helena Ave.	North	East line of Bracondale Ave.
Herbert Ave.....	West	North line of Annette St.
Heyworth Cres. ..	South	East line of Woodbine Ave.
Hiawatha Ave.....	West	North line of Applegrove Ave.
Hillingdon Ave. ..	"	South line of Danforth Ave.
Hilton Ave.	"	North line of Nina St.
Howick Ave.....	North	East line of Silverthorne Ave.
"	"	West line of Blackthorne Ave.
Humberside Ave...	"	West line of Indian Rd. Cres.
Ilford Rd.	"	East line of Arlington Ave.
Ivy Ave....	South	West line of Greenwoods Ave.
Jennings Ave.	North	West line of Clendennan Ave.
Juniper Ave.....	"	West line of Lee Ave.
Keele St....	West	North line of Bloor St.

SCHEDULE No. 11—*Continued.*

TOTAL LIST OF ALL VALVES PLACED IN POSITION DURING THE YEAR 1911, SHOWING THE SIZE, LOCATION, ETC.

Street, Avenue, etc.	Side of Street.	Location.
Keele St.....	West	South line of Conduit St. west.
"	"	North line of Conduit St. west.
Kingswood Ave. ..	"	South line of Kingston Rd.
Lamb Ave.	"	South line of Danforth Ave.
Lansdowne Ave. ..	"	South line of St. Clair Ave.
Laughton Rd.	"	North line of Davenport Rd.
Laxton Ave.	South	East line of Dowling Ave.
Lawlor Ave.	West	South line of Gerrard St.
"	South	North of 12-inch main on Gerrard St. (inter.).
Lee Ave.....	West	North line of Williamson Rd.
Logan Ave.....	"	South line of Wolfrey Ave.
Lumbervale Ave...	North	West line of Lansdowne Ave.
" ..	"	East line of St. Helens Ave.
Lyle Ave.	"	West line of Wayland Ave.
McLean Ave.....	East	North line of Queen St. East.
Madison Ave.....	"	South line of Davenport Rd.
Main St.....	West	South line of Danforth Ave.
"	East	North of 12-in. main (intersec.).
Mallon Ave.	South	East line of Bertmount Ave.
Marchmont Rd....	North	East line of Shaw St.
"	West	South line of Davenport Rd.
Maria St.	North	West line of Clendennan Ave.
"	"	East line of St. John's Place, 60 feet north of south street line.
Marshall St	South	West line of Sheridan Ave.
Medland Cres.....	West	South line of Humberside Ave.
Morley Ave.	East	North line of Applegrove Ave.
Morton Rd.	West	South line of Gerrard St.
"	"	North " "
"	"	North of 12-in. main Gerrard St. intersec.
Murray Ave.....	"	North line of Annette St.
Northlands Rd....	South	West line of Weston Rd. South.
Norway Place.....	North	East line of Woodbine Ave.
Norwood Ave.	West	North line of Swanwick Ave.
"	"	South line of Gerrard St.
"	"	North " "
"	"	North of 12-in. main on Gerrard St. (intersection).
Pacific Ave.....	"	North line of Humberside Ave.
"	"	South " "
"	"	South line of Conduit St.
Parliament Bldgs..	South	South of 8-in. main at connec. S.W. corner of Buildings.
" ..	West	Opp. south line of Parliament Buildings.
Pauline Ave.....	"	North line of Bloor St.
Peele St.....	"	North line of Annette St.
Pendrith Ave.	South	East line of Shaw St.
Playter Cres.....	"	East line of Ellerbeck Ave.
"	"	West line of Jackman Ave.
Pleasant Blvd.....	North	West line of Avoca Ave.
Prescott Ave.....	West	North line of Rockwell Ave.

SCHEDULE No. 11—*Continued.*

TOTAL LIST OF ALL VALVES PLACED IN POSITION DURING THE YEAR 1911, SHOWING THE SIZE, LOCATION, ETC.

Street, Avenue, etc.	Side of Street.	Location.
Prescott Ave.....	West	South line of Rountree Ave.
Pretoria Ave.....	North	East line of Don Mills Rd.
"	"	West line of Ellerbeck Ave.
"	"	West line of Don Mills Rd.
Quebec Ave.	West	South line of Conduit St.
Rainsford Rd.	"	North line of Queen St.
Rhodes Ave	"	South line of Danforth Ave.
Richard Ave.....	North	East line of Greenwoods Ave.
Ridley Gardens. ..	West	North line of Garden Ave.
Rockwell Ave.	North	East line of Silverthorne Ave.
"	"	West line of Prescott Ave.
Roxboro' St. East..	East	112 feet south of hydrant opposite Whitney Ave.
Rusholme Pk. Cres.	South	West line of Rusholme Rd.
"	East	South line of College St.
Rushton Rd.....	West	North line of Tyrell Ave.
Ryding Ave.	North	West of C.P.R. spur line (13 ft. east of hydrant).
"	"	West line of Cobalt Ave.
St. Andrew's Gdns.	North	West line of Glen Rd.
St. Clair Ave.	"	West line of Prescott Ave.
St. John's Rd.	West	North line of Dundas St.
"	"	South line of Maria St.
"	North	East line of Runnymede Rd.
Sarah St.	West	North line of Pretoria Ave.
"	"	South line of Pretoria Ave.
Seymour Ave.	"	North line of Boultbee Ave.
Shaw St.	"	South line of Davenport Rd.
"	"	North line of Tyrrell Ave.
Shudell Ave.....	North	West line of Condor Ave.
Silverthorne Ave..	East	North line of St. Clair Ave.
" ..	West	North line of Rockwell Ave.
" ..	"	South line of Rountree Ave.
Sorauren Ave. (lane off).	South	East line of Sorauren Ave.
Spears Ave.	West	South line of Annette St.
Standish Ave.	"	North line of Douglas Drive.
"	"	South line of Astley Ave.
Summerhill Grdns. west.	"	North line of Summerhill Ave.
Summerhill Grdns. east.	"	North line of Summerhill Ave.
Temple Ave.....	North	West line of Dufferin St.
"	"	East line of Tyndall Ave.
Thorburn Ave.....	South	West line of Dufferin St.
"	"	East line of Tyndall Ave.
Tomlin Ave.....	North	East line of Woodbine Ave.
Uxbridge Ave.	West	North line of Davenport Rd.
Vernon Ave.	North	West line of Gilmour Ave.
"	"	East line of Runnymede Rd.
Wallace Ave.....	"	East line of Perth Ave.
Westlake Ave.	East	South line of Danforth Ave.

SCHEDULE No. 11—*Continued.*

TOTAL LIST OF ALL VALVES PLACED IN POSITION DURING THE YEAR 1911, SHOWING THE SIZE, LOCATION, ETC.

Street, Avenue, etc.	Side of Street.	Location.
Westmount Ave...	North	West line of Sarah St.
" ..	West	North line of Regal Rd.
Western Ave.....	"	South line of Humberside Ave.
Weston Rd. south..	East	On By-pass to C. C. & M. Co. Works at 12-in. main.
Willard Ave.....	West	South line of Annette St.
Windermere Ave..	"	South line of Annette St.
Woodbine Ave.....	"	South line of Gerrard St.
"	"	North line of Gerrard St.
"	"	South line of Danforth Ave.
"	"	Opp. north line of Du Vernet Ave. (closed).
Woodlee Ave.	"	North line of Gerrard St.
Woodville Ave....	East	South line of Conduit St.
"	West	North line of Humberside Ave.
Woodycrest Ave...	"	North line of Danforth Ave.
Wright Ave.....	North	East line of Keele St.
Kingston Road (in county).	South	East line of Victoria Park Ave.
" "	North	Opp. Sir Donald Mann's house.
" "	South	Hunt Club main.
4-IN. STOP VALVES:		
Balfour Ave.....	South	West line of Dawes Rd.
Balsam Ave.....	West	South line of Sycamore Ave.
Coleman Ave.	South	West line of Dawes Rd.
High Park.....	"	Near hydrant at Picnic Ground.

SCHEDULE No. 11.—*Continued.*

CHECK VALVES PLACED IN POSITION DURING 1911.

Street, Avenue, etc.	Side of Street.	Location.
20-IN. CHECK VALVES :		
Yonge St.	Centre	On 20-in. main between 24-in. and 16-in. mains
16-IN. CHECK VALVES :		
Yonge St.	West	19 feet south of Macpherson Ave.
Winchester Drive..	South	27 feet east of subway (C.P.R.)
Riverdale Park....	.....	14 feet west of west line of Broadview Ave., opposite Sparkhall Ave.
12-IN. CHECK VALVES :		
Danforth Ave.....	South	West line of Morton Road.
Gerrard St. east ..	"	"
6-IN. CHECK VALVES:		
Beech Ave.	West	South line of Sycamore Place.
Lee Ave.....	"	12 feet north of Williamson Road.
Silver Birch Ave...	"	620 feet south of Pine Ave.
4-IN. CHECK VALVES :		
Balsam Ave.....	West	South line of Sycamore Ave.
Spruce Hill Rd....	"	"

VALVES REMOVED FROM OFF THE STREETS DURING 1911.

Street, Avenue, etc.	Side of Street.	Location.
16-IN. STOP VALVES :		
Queen St. east....	North.....	East side Don Esplanade Drive.
6-IN. STOP VALVES :		
Danforth Ave.....	North	32 feet east of Dawes Road.
"	"	East line of Main St.
Davies Ave.	West	North line of Queen St.
Dawes Road.....	"	15 feet north of Danforth Ave.
Lyle Ave.	North	West line of Wayland Ave.
Queen St.....	"	East line of Davies Ave.
4-IN. STOP VALVES :		
Balsam Ave.....	West	South line of Sycamore Ave.
Balfour Ave.....	South	West line of Dawes Rd.
Coleman Ave.	"	"

SCHEDULE No. 11—*Continued.*

SUMMARY OF VALVES ON STREETS AT END OF 1911.

Size and Description.	In use at end of 1910.	Put in during 1911.	Taken out during 1911.	Total in use at end of 1911.
STOP VALVES:				
36 inch	14	....	....	14
30 "	7	....	....	7
24 "	24	....	....	24
20 "	38	1	....	39
16 "	18	9	1	26
12 "	694	49	....	743
10 "	15	....	....	15
9 "	5	....	....	5
8 "	20	4	....	24
6 "	2,762	234	6	2,990
4 "	149	4	3	150
3 "	29	....	....	29
Totals	3,775	301	10	4,066
CHECK VALVES:				
36 inch	5	....	....	5
30 "	4	....	....	4
24 "	1	....	....	1
20 "	1	1	....	2
16 "	..	3	....	3
12 "	14	2	....	16
6 "	57	3	....	60
4 "	....	2	...	2
Total	82	11	....	93

SCHEDULE No. 11.—*Continued.*

BLOW OUT VALVES.

6-inch—Foot of Simcoe Street, west of Union Station.
6-inch—Yonge Street, south of C.P.R. at Slip.
8-inch—Foot of George Street at Slip
6-inch—Foot of Sherbourne Street at Slip.
6-inch—Foot of Princes' Street (old Sugar Refinery).
6-inch—Parliament and Mill into sewer.
6 inch—Foot of Dunn Avenue into Lake.
6-inch—Foot of Dowling Avenue into Lake.
6-inch—14 feet south of 4th hydrant, south of G.T.R. on Dufferin into sewer.
4-inch—Abbs Lane, west end into sewer.
4-inch—Saunderson Avenue, east end into sewer.
3-inch—Hickory Street, north end into sewer.
6-inch—Defoe Street, 6-inch blow out into sewer opposite lane east of Stafford Street.
6-inch—Wellington Avenue, Stanley Park into manhole (west of Walnut).
6-inch—8 feet south of hydrant, Bathurst Street (foot of), opposite Connell's office, into sewer.
12-inch—12 inches from Reservoir off 24-inch into creek.
6-inch—Foot of Leslie Street, north-west corner of Eastern Avenue.
6 inch—Yonge Street (foot of) into Slip.
4 inch—Dudley Place, east end into sewer.
4-inch—Head of Ottawa, into sewer.

SCHEDULE No. 12.

Number of	renewed	services	laid by	Corporation,	1894	11
"	new	"	"	"	1895	319
"	renewed	"	"	"	1895	38
"	new	"	"	"	1896	291
"	renewed	"	"	"	1896	45
"	new	"	"	"	1897	474
"	renewed	"	"	"	1897	29
"	new	"	"	"	1898	504
"	renewed	"	"	"	1898	32
"	new	"	"	"	1899	664
"	renewed	"	"	"	1899	35
"	new	"	"	"	1900	683
"	renewed	"	"	"	1900	26
"	new	"	"	"	1901	1,133
"	renewed	"	"	"	1901	8
"	new	"	"	"	1902	1,319
"	renewed	"	"	"	1902	13
"	new	"	"	"	1903	1,402
"	renewed	"	"	"	1903	45
"	new	"	"	"	1904	2,036
"	renewed	"	"	"	1904	48
"	new	"	"	"	1905	3,185
"	renewed	"	"	"	1905	20
"	new	"	"	"	1906	4,041
"	renewed	"	"	"	1906	31
"	new	"	"	"	1907	3,961
"	renewed	"	"	"	1907	8
"	new	"	"	"	1908	3,672
"	renewed	"	"	"	1908	3
"	new	"	"	"	1909	5,147
"	renewed	"	"	"	1909	8
"	new	"	"	"	1910	6,151
"	renewed	"	"	"	1910	15
"	new	"	"	"	1911	7,004
"	renewed	"	"	"	1911	8
"	services in Yorkville at time of annexation					448
"	" Parkdale		"	"		885
Total number of services laid on Island						403

SCHEDULE No. 13—Number and Size of Services in Use to December 31st, 1911.

	¼-in.	⅜-in.	½-in.	⅝-in.	¾-in.	1-in.	1½-in.	2-in.	2½-in.	3-in.	4-in.	6-in.	8-in.	10-in.	12-in.	Total.
Services laid previous to 1875																1,927
New services laid in 1875			617	194	38	7	4	5		1						866
" " 1876			900	80	11	8	1	4	1	8						1,013
" " 1877			1,083	43	9	8		10		14						1,167
" " 1878	86	1,427	717	28	5	9		5		14	1					2,292
" " 1879		1,248	633	47	9	5		4		12						1,958
" " 1880		607	385	26	7	3		8		19						1,055
" " 1881		1,375	1,275	62	17	17		7		17	1					2,771
" " 1882		625	1,139	44	23	20		5		14						1,870
" " 1883		373	1,311	70	16	13		17		17	3					1,820
" " 1884		441	1,519	70	13	25		9		20	2					2,099
" " 1885		190	2,086	56	26	13		7		5		1				2,366
" " 1886		14	2,741	92	37	29		9		25		8				2,955
" " 1887		10	3,062	106	55	38		15		25		4				3,315
" " 1888			2,856	101	32	22		19		14	7	4				3,055
" " 1889			3,087	127	52	45		19		1	24	1				3,356
" " 1890			1,995	83	37	35		16			24	1				2,191
" " 1891			1,995	33	34	24		11			13	1				2,111
" " 1892			1,109	26	23	23		7			12					1,200
" " 1893			465	18	13	15		8			8	1				528
" " 1894			332	29	15	17		3			4	1				401
" " 1895			270	26	25	17		11			7	1				357
" " 1896			359	20	22	20		13			1	1				336
" " 1897			390	34	17	36		16			5	5				503
" " 1898			378	60	45	27		12		1	6	7				536
" " 1899			430	123	70	23		26		1	5	11				699
" " 1900			421	137	43	53		17			6	5				682
" " 1901			654	202	92	40		24			16	5				1,033
" " 1902			1,019	128	74	45		36			15	10				1,332
" " 1903			1,101	113	83	41		37		7	12	7	1			1,402
" " 1904			1,560	231	80	48		50		12	37	15	3			2,036
" " 1905			1,722	354	138	58		29		7	20	28	1			3,185
" " 1906			2,710	899	213	95		81		9	19	15				4,041
" " 1907			2,722	762	233	96		71		14	17	43	3			3,961
" " 1908			2,353	890	313	85		84		18	14	14	1			3,772
" " 1909			3,769	798	294	121		108		18	18	19	2			5,147
" " 1910			4,809	789	258	118		99		20	25	30	2	1		6,151
" " 1911			5,233	1,043	344	173		141		15	26	27	1	1		7,004
Totals	86	6,310	59,207	7,944	2,816	1,472	5	1,043	1	328	348	265	14	2		82,493

Total number of services on Island	403
Laid by Yorkville previous to annexation	448
" Parkdale " "	885
Total number of services	84,229

SCHEDULE No. 14.

Meters Rebuilt in Shop.

Make.	⅝-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	Total.
Crown	109	60	24	....	8	2	203
Worth	6	4	6	2	2	....	20
Tridents	60	48	15	....	1	....	124
Lamberts	36	21	18	....	1	....	76
Nash	6	8	4	....	....	....	18
Keystone	44	30	15	....	....	....	89
Herseys	64	17	10	....	....	....	91
King	1	1	....	....	....	....	2
Empire	2	....	1	1	....	....	4
Siemen	7	6	6	....	2	....	21
Bat	....	1	....	....	....	....	1
Gem	....	....	....	....	3	....	3
Total	335	196	99	3	17	2	652

SCHEDULE No. 15.

THE TOTAL NUMBER OF METERS IN USE UP TO DEC. 31ST, 1911.

Make.	⅝ inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	4-inch.	5-inch.	6-inch.	8-inch.	10-inch.	Total
Crown	393	205	104	....	275	91	96	....	16	....	....	1,180
Worth	28	36	115	45	132	27	3	....	....	....	....	386
Nash	30	17	27	1	1	....	....	....	....	....	....	76
Hersey	129	57	57	1	1	....	....	....	....	....	1	246
Keystone	88	82	56	1	2	....	....	....	....	....	....	229
Lambert	80	71	78	12	....	....	....	....	....	....	....	241
Trident	160	131	117	19	....	....	....	....	....	....	....	427
Siemen	....	13	22	.....	35	19	13	9	4	2	1	118
Empire	6	1	2	1	....	....	2	....	....	....	....	12
King	7	5	2	....	....	....	....	....	....	....	....	14
Columbia	1	....	....	....	....	....	....	....	....	....	....	1
Gem	....	....	....	....	82	20	12	....	5	....	1	120
Buffalo	....	....	1	....	....	....	....	....	....	....	....	1
Union	....	....	....	....	27	....	....	....	....	....	....	27
Crest	....	....	....	....	....	19	12	....	....	....	....	31
Kennedy	....	....	....	....	3	10	7	....	11	....	....	31
P. Crowns	19	7	2	....	9	2	1	....	....	....	....	40
P. Worth	4	3	2	....	1	....	....	....	....	....	....	10
P. Nash	11	4	2	....	1	....	....	....	....	....	....	18
P. Hersey	5	2	1	....	1	....	....	....	....	....	....	9
P. Siemen	33	41	15	2	6	1	....	....	1	1	....	100
P. Trident	3	1	....	....	....	....	....	....	....	....	....	4
P. Buffalo	....	....	2	....	....	....	....	....	....	....	....	2
P. Kennedy	....	....	....	....	....	....	....	....	2	....	....	2
P. Gem	....	....	....	....	2	1	1	....	....	....	....	4
P. Keystone	....	1	....	....	1	....	1	....	....	....	....	3
P. Lambert	1	1	....	....	....	....	....	....	....	....	....	2
P. Check	3	....	....	....	....	....	....	....	....	....	....	3
Total	1001	678	605	82	579	190	148	9	39	3	3	3,337

SCHEDULE No. 16.

METERS INSPECTED AND REPAIRED ON SERVICE.
WITHOUT CHANGE.

Make.	⅝-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	4-inch.	6-inch.	8-inch.	10-inch.	Total.
Crown	123	91	34	....	118	66	53	15	....	....	500
Worth	10	32	130	38	124	34	....	....	....	....	368
Lambert	23	16	13	4	2	....	....	....	....	....	58
Trident	42	48	33	....	1	....	....	....	....	....	124
Hersey	38	16	13	....	....	....	....	....	....	4	71
Keystone	21	38	14	...	3	....	....	....	....	....	76
Nash	14	4	7	....	1	....	....	....	....	....	26
Siemen	....	6	8	....	14	3	5	1	1	....	38
Kennedy	....	....	....	....	12	32	28	44	....	....	116
Union	....	....	....	....	14	....	....	....	....	....	14
Gem	....	....	....	....	74	15	14	5	....	....	108
Crest	....	....	....	....	....	20	13	....	....	....	33
P. Siemen	8	9	3	....	1	....	....	4	....	....	25
P. Empire	5	....	....	....	....	....	....	....	....	....	5
P. Nash	3	....	1	....	....	....	....	....	....	....	4
P. Crown	1	1	....	....	1	....	....	....	....	....	3
P. Heresy	1	1	1	....	1	....	....	....	...	....	4
P. Worth	....	....	2	....	....	.. .	....	....	....	....	2
P. Gem	....	....	....	....	....	....	1	....	....	....	1
P. Kennedy	....	....	....	....	....	....	....	3	....	....	3
Total	289	262	259	42	366	170	114	72	1	4	1,579

SCHEDULE No. 17.

METERS TAKEN OFF FOR REPAIRS AND REPLACED.

Make.	⅝ inch.	¾ inch.	1 inch.	1½ inch.	2 inch.	3 inch.	4 inch.	6 inch.	10 inch.	Total Number.
Crown	145	53	24	....	16	8	8	5	....	259
Worth	12	13	11	3	10	1	....	....	....	50
Hersey	53	16	12	....	....	....	....	....	3	84
Lambert	32	24	20	....	1	....	....	....	....	77
Keystone	49	29	15	..	....	....	....	....	....	93
Nash	16	11	7	....	....	....	....	....	....	34
Trident	48	52	13	1	1	....	....	....	....	115
Empire	4	..	....	....	....	....	....	....	....	4
King	1	2	4	....	....	....	....	....	....	7
Siemen	....	4	4	....	1	....	1	....	....	10
Gem	....	....	....	....	6	....	1	....	2	9
Union	....	....	....	....	4	....	....	....	....	4
Crest	....	....	....	....	....	3	1	....	....	4
Kennedy	....	....	....	....	....	...	2	17	....	19
P. Worth	3	1	....	....	....	....	....	....	....	4
P. Crown	8	2	....	....	2	....	....	....	....	12
P. Trident.	2	1	....	....	....	....	....	....	....	3
P. Hersey	1	....	....	....	....	....	....	....	....	1
P. Nash	1	1	4	....	....	....	....	....	....	6
P. Siemen	9	6	2	....	1	....	....	1	....	19
P. Gem	....	....	....	....	1	....	....	....	....	1
P. Lambert	1	....	....	....	....	....	....	....	....	1
Total	385	215	116	4	43	12	13	25	3	816

SCHEDULE No. 18.

New Meters Placed.

Make.	⅝-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	4-inch.	6-inch.	Total.
Crown	9	5	1	....	96	24	20	4	159
Worth	1	....	....	1	....	....	....	....	2
Hersey	56	19	17	1	....	....	....	....	93
Lambert	36	31	37	13	1	....	....	....	118
Keystone	32	4	8	....	1	....	....	....	45
Nash	1	....	....	1	....	....	....	....	2
Trident	59	32	41	19	....	....	....	....	151
Empire	....	....	....	....	....	....	1	....	1
Crest	....	....	....	....	....	1	....	....	1
Gem	....	....	....	....	1	....	....	....	1
P. Siemen	1	....	....	....	....	....	....	....	1
P. Nash	1	....	....	....	....	....	....	....	1
P. Crown	....	....	....	....	3	....	....	....	3
P. Gem	....	....	....	....	....	....	....	1	1
Total	196	91	104	35	102	25	21	5	579

SCHEDULE No. 19.

Meters Ordered Off.

Make.	⅝ inch.	¾ inch.	1 inch.	1½ inch.	2 inch.	3 inch.	4 inch.	Total.
Crown	21	7	5	....	10	4	2	49
Worth	....	3	2	2	3	....	....	10
Nash	2	3	....	....	.. .	....	....	5
Lambert	4	4	5	1	1	....	....	15
Trident	13	7	6	....	....	....	....	26
Keystone	7	8	....	....	....	....	....	15
King	1	....	....	....	....	....	....	1
Hersey	14	4	3	....	....	....	....	21
Siemen	....	1	....	....	....	1	....	2
Gem	....	....	....	....	3	....	....	3
Crest	....	....	....	....	....	....	1	1
P. Hersey	1	....	....	....	....	....	....	1
P. Crown	1	....	....	....	....	....	....	1
P. Siemen	2	3	....	....	....	....	....	5
Union	....	....	....	....	1	....	.. .	1
Total	66	40	21	3	18	5	3	156

SCHEDULE No. 20.

RETURN OF TEMPERATURE OF WATER FOR YEAR 1911, TAKEN AT THE ENGINE HOUSE WELL AND THE CITY HALL TAP.

Month.	DEGREES FAHRENHEIT.					
	Engine House Well.			City Hall Tap.		
	Highest.	Lowest.	Average.	Highest.	Lowest.	Average.
January	34	33	33.67	39	36	37.00
February	34	33	33.14	37	35	36.12
March	35	33	33.41	38	35	36.59
April	48	33	39.83	52	36	43.52
May	58	40	48.54	61	44	51.92
June	60	50	53.20	63	52	56.58
July	58	40	45.80	60	46	49.80
August	70	40	54.64	72	46	59.07
September	62	50	52.20	65	55	62.40
October	57	42	50.29	60	46	54.28
November	44	40	40.80	48	43	45.07
December	40	36	38.75	44	40	42.36
Averages for Year	50.00	39.16	43.69	53.25	42.83	47.89

ANALYSIS OF TEMPERATURE.

Engine House Well.

The highest on August 8th, 70 deg.; the lowest February 1st to 23rd, 33 deg.; the lowest average in February 33.14 deg.

City Hall Tap.

The highest on August 8th, 72 deg.; the lowest on February 8th, 33 deg.; the lowest average in February 36.12 deg.

SCHEDULE No. 21.

Leaks on Mains Repaired During the Year 1911.

The following leaks on mains were repaired during the year:

36-inch	4
30-inch	
24-inch	8
20-inch	7
16-inch	1
12-inch	118
10-inch	
8-inch	4
6-inch	130
4-inch	7
3-inch	
Total	279 of all sizes.

The cost of repairing (exclusive of repairs to asphalt pavements), was—$3,269.98, including material used, or an average cost of $11.72 per leak.

Average number of leaks per mile of distribution is .64, and the average cost per mile $7.55.

SCHEDULE No. 22.

STATEMENT OF QUANTITY OF WATER PUMPED, AND THE COST OF PUMPING, FIGURED ON COAL, WAGES, MAINTENANCE, AND INTEREST AND SINKING FUND. MAIN PUMPING STATION.

Year.	Total Water Pumped Imp. Gallons.	Total Fuel, Pounds.	Cost of Fuel.	Wages.	Total Cost, including Repairs, Fuel, Wages, etc. Main Pump. Station.	Fuel. Cost per 1,000 Gals.	Fuel and Wages. Cost per 1,000 Gals.	Fuel, Wages and Maintenance. Cost per 1,000 Gals.	Total Working Expenses, including Collection of Revenue, including Repumping.	Interest and Sinking Fund.	Total Cost, including Fuel, Wages, Maintenance, Interest and Sinking Fund	Total Cost per 1,000 Gals. on same.
			$ c.	$ c.	$ c.	Cents.	Cents.	Cents.	$ c.	$ c.	$ c	Cents.
1870	441,011,250											
1871	509,908,250											
1872	548,746,840											
1873	586,230,295											
1874	789,434,045											
1875	1,390,706,595	5,003,262	17,156 47	5,838 95	25,886 05	1.23	1.65	1.86				
1876	1,625,138,876	6,988,282	19,645 75	6,447 02	30,379 60	1.21	1.60	1.86				
1877	2,633,433,932	10,407,992	25,556 29	7,866 70	36,895 23	0.97	1.26	1.40				
1878	1,417,370,918	8,120,000	15,196 20	7,140 00	25,246 50	1.00	1.51	1.78				
1879	1,610,104,342	10,872,211	19,313 07	7,140 00	29,827 38	1.19	1.63	1.85				
1880	1,785,859,706	11,694,808	28,455 72	7,140 00	39,285 25	1.59	1.98	2.19				
1881	1,910,430,419	12,391,874	31,410 04	7,473 75	42,529 22	1.64	2.03	2.22				
1882	2,108,933,115	11,685,556	30,170 64	8,819 81	43,619 63	1.43	1.84	2.06				
1883	2,809,956,484	17,266,679	43,529 08	10,025 72	59,809 65	1.54	1.89	2.12				
1884	3,645,442,082	19,920,782	52,525 56	10,842 40	69,355 64	1.44	1.73	1.90	117,733 27	150,603 00	268,336 27	7.36
1885	3,537,482,598	18,644,465	46,589 27	12,017 85	65,082 39	1.31	1.64	1.84	104,530 50	151,614 00	256,114 50	7.24
1886	4,134,376,998	19,285,371	41,979 32	14,814 40	65,579 74	1.01	1.36	1.58	112,211 24	159,082 00	271,293 24	6.80
1887	4,417,938,169	23,283,900	50,051 85	16,968 79	76,597 16	1.13	1.51	1.73	130,175 09	163,337 00	293,512 09	6.64
1888	4,041,964,514	20,457,935	46,600 77	19,043 58	76,059 72	1.12	1.58	1.88	135,631 69	171,197 00	306,828 69	7.59
1889	4,148,781,634	19,231,940	44,135 10	20,192 39	75,360 77	1 06	1.54	1.81	161,567 81	181,104 00	342,671 81	8.25
1890	5,249,760,226	24,615,830	56,239 99	21,847 31	83,136 12	1.03	1.44	1.58	168,633 84	226,273 00	394,906 84	7.52
1891	6,534,375,161	29,300,240	60,012 77	22,556 49	89,060 35	0.90	1.24	1.36	182,854 12	226,273 00	409,127 12	6.26
1892	6,659,925,650	34,505,875	71,805 25	21,645 34	103,202 91	1.07	1.39	1.54	180,215 79	222,626 00	402,841 79	6.04
1893	6,646,021,488	26,013,840	64,702 86	27,078 65	100,013 77	0.97	1.37	1.50	188,481 70	224,732 00	413,213 70	6.21
1894	6,589,492,142	26,822,145	54,902 85	29.959 14	103,650 47	0.83	1.22	1.57	183,975 23	224,732 00	408,707 23	6.20
1895	6,639,680,218	21,178,879	40,221 85	23,305 49	75,502 63	0 66	1.01	1.13	148,908 06	224,732 00	373,640 06	5.62
1896	6,781,187,980	18,606,508	25,307 90	22,529 41	55,626 60	0.37	0.70	0.82	145,209 80	225,545 00	370,754 80	5.46
1897	6,723,757,030	20,711,250	26,880 50	22,933 92	57,093 25	0.39	0.73	0.84	141,954 80	225,545 00	367,499 80	5.46
1898	7,136,334,102	22,100,145	27,572 00	23,983 07	53,134 40	0.38	0.71	0.74	146,354 54	222,400 00	368,754 54	5.16
1899	7,824,348,217	24,682,935	26,684 57	24,770 54	71,279 65	0.34	0.65	0.90	162,185 19	222,400 00	384,685 19	4.91
1900	8,064,384,595	24,148,565	38,668 54	27,314 83	80,339 85	0.47	0.80	0.99	169,824 11	222,749 00	392,573 11	4.86
1901	8,299,298,465	26,272,640	39,562 56	28,295 43	78,234 31	0.47	0.81	0.94	171,683 97	222,749 00	394,432 97	4.75
1902	7,993,916,325	23,769,930	37,409 30	28,170 36	74,625 82	0.46	0.82	0.93	175,020 73	223,078 00	398,098 73	4.98
1903	8,735,658,003	30,260,615	54,275 93	31,405 90	93,591 55	0.62	0.98	1.07	197,915 19	226,932 00	424,847 29	4 86
1904	9,076,711,575	32,843,325	52,643 51	30,680 11	94,010 62	0.58	0.91	1.03	217,575 63	252,739 00	470,314 63	5.18
1905	9,174,732,461	34,512,095	49,644 31	32,917 06	89,429 66	0.54	0 89	0.97	219,325 81	252,739 00	472,064 81	5.01
1906	9,859,486,415	27,657,495	39,713 57	42,075 21	92,942 16	0.40	0.83	0.94	224,909 74	253,409 00	478,318 74	4.75
1907	10,356,547,168	30,768,630	48,380 46	43,160 00	101,910 96	0.46	0 88	0.98	224,255 03	296,460 00	540,715 03	5.22
1908	10,669,056,355	31,750,575	49,226 46	44,563 78	105,320 85	0.46	0.87	0.98	252,079 97	306,452 00	558,531 97	5.23
1909	11,419,392,921	33,790,900	47,615 39	47,696 83	105,450 95	0.41	0.83	0.92	261,168 84	312,599 00	573,767 84	5.00
1910	12,777,315,692	42,591,890	59,628 64	52,089 03	123,555 02	0.46	0.86	0.96	362,269 97	374,281 76	736,551 73	5.75
1911	15,377,990,439	53,328,047	63,784 38	50,048 55	127,363 29	0.41	0.74	0.82	388,088 09	387,754 00	765,842 09	5.00

SCHEDULE No. 23.

STATEMENT OF WATER PUMPED BY ENGINES NOS. 1 AND 2 FOR THE YEAR 1911 AT WEST TORONTO PUMPING STATION.

Month.	No. of Hours Working each Month.				Number of Strokes made by Engines each month.		Quantity of Water Pumped each Month by each Engine. Imp. Gals.		Total Quantity Pumped each Month. Imp. Gals.	Total Quantity of Coal Consumed each Month.	
	No. 1.		No. 2.		No. 1.	No. 2.	No. 1.	No. 2.			
	h.	m.	h.	m.						Tons.	Lbs.
January	104	57	63	3	1,007,987	45,690	50,399,364	3,783,400	54,182,764	231	1,798
February*	142	16	25	44	846,382	79,208	42,319,100	1,544,546	43,863,646	181	1,070
March										15	1,000
April										15	
May										15	1,000
June										15	
July	140	59	27	1	595,721	10,160	29,786,050	1,621,516	31,407,566	155	225
August	158	52	9	8	1,002,776	28,093	50,138,800	547,823	50,686,623	231	1,798
September	131	31	36	29	1,010,792	112,260	50,539,600	2,189,071	52,728,671	224	830
October	167	14		46	1,093,342	2,349	54,667,100	45,786	54,712,886	231	1,798
November	165	31	2	29	946,803	7,652	47,340,150	149,220	47,489,370	224	830
December	166	32	1	28	1,053,547	4,524	52,677,350	88,209	52,765,559	231	1,798
Totals	1,177	52	166	8	7,557,350	289,936	377,867,514	9,969,571	387,837,085	1,774	147

* Pumps shut down from 11.30 p.m. February 24th until 11.00 a.m. July 11th. Steam kept under boilers.

SCHEDULE No. 24.

RECORD OF WATER RE-PUMPED AT EAST TORONTO STATION FOR THE YEAR 1911.

Month.	Number of Hours Engine Working.	Number of Revolutions made by Pumps.	Quantity of Water Re-pumped.	Total Quantity of Coal consumed under Boilers.
	Hrs. Min.			
January	243 30	224,831	6,744,930	80,000
February	206 ..	196,708	5,901,240	60,000
March	233 ..	224,702	6,741,060	71,000
April	232 ..	251,792	7,553,760	65,000
May	286 30	320,263	9,607.890	80,000
June	285 30	371,072	11,132,160	72,000
July	321 30	380,751	11,422,530	92,000
August	328 30	452,245	13,567,350	84,000
September	309 ..	308,798	9,263,940	78,000
October	324 ..	306,081	9,182,430	87,000
November	276 30	284,785	8,543,550	76,000
December	280 30	309,995	9,299,850	76,000
Totals	3,326 30	3,632,023	108,960,690	921,000
Monthly Averages.	277 12	302,668	9,080,057	76,750

SCHEDULE No. 25.

QUANTITY OF WATER PUMPED BY TURBINES AT EAST TORONTO PUMPING STATION FOR 1911.

Month.	Number of days on which Engines were working.	Number of hours working each month.		Quantity of water pumped each month by Turbines.	Quantity of coal consumed.	
		h.	m.	Imp. Galls.	Tons	Lbs.
January	4	5	35	201,000	1	790
February						
March						
April						
May	1	4	..	144,000	1	....
June	16	25	40	984,520	6	833
July	25	61	55	2,229,000	15	958
August	27	69	30	2,502,018	17	750
September	26	67	32	2,431,000	16	1,767
October	26	63	12	2,275,000	15	1,600
November	26	60	53	2,192,000	15	455
December	25	64	02	2,305,000	16	017
Totals	176	422	19	15,263,538	105	1,170
Monthly Averages	19.5	46	55	1,695,948	10	1,117

Report of Principal Assistant Engineer

Herewith I submit the reports of the Departments under my charge for the year ending December 31st, 1911, viz.:

The Roadway Department, under Mr. M. A. Stewart; the Sewer Department, under Mr. J. D. Shields, and the Railway and Bridges Department, under Mr. E. L. Cousins.

Owing to the resignation of Mr. Blanchard, of the Main Drainage Department, the work formerly under his supervision was turned over to the writer, with Mr. A. B. Garrow in immediate charge.

The storm overflow sewers, which had formerly been in the hands of the Main Drainage Department, were transferred to the Sewer Department, and Mr. Worthington was placed in charge.

The reports of the work done by the various Departments will speak for themselves, and a careful examination will show that this year a greater volume of business has passed through the Engineer's Office than ever before.

The new street railway tracks, commenced last year, have been largely completed. The only work left to be done next year is: Wellington, Teraulay, Agnes, Anderson and Elliott Streets. These lines should be completed early next year, if the property necessary for widening the streets can be secured.

Early in the year it was decided to permanently pave some of the roads in the Exhibition grounds, and $65,000 was appropriated for that purpose. About 40,000 yards of pavement, with the necessary curb and gutter, were laid in about 3 months. Asphalt macadam was decided upon as the kind of pavement most desirable, and several different kinds were laid as experiments. The details will be further discussed in the report of the Roadway Department.

Rocmac pavement was also given a trial on Yonge Street, opposite the Mount Pleasant Cemetery; the pavement is being watched carefully and results noted.

The Sewer Department was exceptionally busy this year, running from three or four gangs all year in place of one, as in previous years.

Probably the most difficult piece of sewer work undertaken was that in connection with "Grade Separation," which necessitated the changing of all the sewers crossing the Grand Trunk Railway in South Parkdale.

Three syphons were constructed across the tracks, at Wilson Avenue, Close Avenue and Dufferin Street, and all sewage from the north crosses at these points. The new system is working satisfactorily. The sewerage systems for East and West Toronto are designed, and the outlets should be well underway by the end of the year.

The work of laying sewers in the newly annexed districts on the north is progressing favorably, and all this territory should have drainage facilities by the end of next year.

The storms overflow sewers have been all designed, and work started on some of the most important.

The high level interceptor is about completed from Garrison Creek to the tanks, and the low level will be completed early next year. The high level extension westerly into Parkdale is designed, and will be completed next year.

Sewage disposal works should be in operation not later than July, 1912.

The Queen Street bridge is practically completed; a little work has yet to be done in connection with paving the approaches and laying the necessary sidewalks.

Weston Road bridge has been delayed, on account of the contractor for the steel being unable to make delivery of steel in good time.

Wilton Road bridge was completed and opened for traffic in July.

Civic car lines on Gerrard and St. Clair were started late in the summer, so progress on this work has not been as great as was expected at the first of the year. Track laying, however, has been commenced on both lines, and the grading of the streets is progressing favorably. If nothing unforeseen happens, work on these two lines will be finished next year.

The automobiles asked for last year, to facilitate the work of the Department, have been provided, and are proving a great convenience to those who are superintending the various works under construction.

The salary schedule was altered somewhat this year, and gives the various Departments sufficient help, and at the same time increases the salaries of some positions that were formerly not adequately provided for. A few changes are still desirable to put the schedule on a uniform basis, which no doubt will be made this year.

Our method of accounting is not yet in an absolutely satisfactory condition, and I would urge the necessity of securing more accommodation for this branch of the Department, in anticipation of enlarging its scope to take care of all accounts that have in the past been handled in the various Departments.

I also desire to bring to your attention the advisability of making some change in the filing systems in use in the office, and would suggest that the matter be turned over to some person expert in the work, to devise a plan that will satisfactorily meet the conditions.

A large amount of equipment has been purchased for our Photographing Department, and it is hoped that next year a properly equipped room will be at the services of those requiring photographs in connection with the work.

The weekly meetings of the staff are turning out to be very useful, and will no doubt be the means of producing greater co-operation in the work of the various branches of the Department.

During the year an effort was made to centralize the purchasing of all materials for the various branches of the Department, and in general this scheme has worked out satisfactorily. It is expected next year that a Purchasing Department will be established to efficiently take care of this branch of the work. All material is purchased on requisition from the heads of the Departments, and in this way extravagances in the ordering of material can be practically eliminated. A thorough checking system is also provided, so that the possibility of mistakes in the quantity and kind of material delivered is reduced to a minimum. I think there is no question of doubt that by the end of next year this branch of the Department will be on a sound and business-like footing, giving excellent satisfaction to all the Departments working in conjunction with it.

Respectfully submitted.

G. G. POWELL.

Pavements, Roadways, Permanent Sidewalks, Plank Sidewalks and Repairs

CITY ENGINEER'S DEPARTMENT,
Toronto, December 31st, 1911.

Mr. C. H. Rust, City Engineer:

The following report is a statement in general and detail of the work carried out under the supervision of the Roadway Division of the City Engineer's Department during the year ending on 31st December, 1911.

The total work undertaken and carried to completion consisted of seven hundred and sixty-two separate works, of which fifty were pavements and sidewalks, which were laid to replace those destroyed by the construction of new street railway lines, and certain works constructed in Exhibition Park at the request of the Industrial Exhibition Board. Of the remaining seven hundred and twelve works, five hundred were constructed under contract, one hundred and ninety-nine by day labor, and the remaining thirteen by private contract under the supervision of the Department.

The following is a summary of the above statement:

Carried over from 1910		132
Contract works	500	
Day labor works	199	
Private works	13	
	712	
Specials	50	
Total	762	

Table No. 1 shows a comparison between the number of works of each class done in 1909 and 1910, and those done in 1911, exclusive of the special work above mentioned.

TABLE No. 1.

Class of Work.	*Number of Works.* 1909.	1910.	1911.
Asphalt	86	71	72
Asphalt block	11	2	8
Bitulithic	33	38	29
Brick on concrete	9	2	..
Brick block	10	7	12
Concrete	6	17	18
Wooden block (treated)	..	1	..
Cedar block (on concrete)	..	..	..
Cedar block (on sand)	..	..	..
Granite setts	..	..	1
Macadam	2	..	2
Macadam reconstruction	..	1	..
Tar macadam	..	..	..
Construction of new track allowance:			
Brick block	1	3	3
Granite	4	2	2
Scoria	..	..	2
Asphalt block	..	..	1
Treated wood block	..	..	4
Macadam	..	..	1
Miscellaneous	3	..	..
Reconstruction of track allowance:			
Scoria, brick block, granite, etc	11	14	7
Permanent intersections T. A. (new)	3	..	26
Permanent intersections T. A. (reconstructed)	..	..	3
Gradings	11	9	22
Brick sidewalks	..	..	..
Concrete sidewalks	392	428	407
Concrete sidewalks (private contract)	54	34	13
Brick sidewalks (private contract)	..	..	..
Concrete curbings	65	54	79
	701	683	712

A division of the total mileage of all works into three main classes shows 35.94 miles of pavements, 57.36 miles of permanent walks, and 16.19 miles of curbing.

The policy, established some years ago, whereby the City Engineer tendered on all works for which tenders were invited, was continued during the past year with the same success as formerly. It was found that the City Engineer was lowest on 304 works—104 pavements and

TABLE No. 2.

MILEAGE OF DIFFERENT CLASSES OF PAVEMENTS, ROADWAYS AND SIDEWALKS LAID FROM 1890 TO 1911.

Class of Work	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
Pavements and Roadways:	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles
Asphalt	1.73	1.635	6.216	5.607	3.067	1.156	0.366	0.460	3 408	6 215	6.348	4.449	5.237	6.662	6.336	5.404	11.600	17.276	21.031	15.411	11.811	13.556
Bitulithic														0.063	1.528	1.635	2.759	4.348	5.326	5.001	6 055	6.160
Cedar block on sd. and plk. foundation	15.51	9.186	3.349	3.249	0.852	1.753	0.428	2.459	4 831	3.151	7.842	2.725	2.191	1.774	0.511	0.630	1.441	0.089				
Macadam		0.123	0.494	....	0.059	1.663	1.661	0.510	2.089	5.013	2.503	2.733	5.486	2.737	1.940	3.373	1.591	1.434	0.973	0.086	*0.614	2.214
Tar Macadam														2.148	0.920	1.257	0.247	0.738				
Cobble	0.10	0.069	0.366								0.068											
Tamarac on Concrete	0.192	0.77																				
Cedar Blk. on Concrete			8.416	2.185	0.826	0.227	0.038	....	0.084	0.079	....	0.021		0.069		0.500			0.060			
Stone Setts on Concrete			0.705	3.743	2.563	0.085					0.107	0.028		0.427		0.662		0.057				0.068
Scoria on Concrete	0.138		0.028			0 117			2.986	1.367	1 247	0.669			0.613	0.600						
Asphalt Block																		0.281	0.546	2.334	0.082	1.751
Brick on Concrete				3.964	0.787	0.744	1.032	5.803	6.079	3.670	5.472	2.885	4 272	2.602	2.876	3.751	1.504	2.860	2.353	1.611	1.692	1.183
Brick on Gravel							0.028	0.838	0.352	0.943	0.057											
Brick on Broken Stone										0.546	0.516	1.627										
Treated Wood Block																		0.396			0.149	
Concrete Pavements						0.071			0.057				0.041	0.147	0.053	0.055	0.144	0.448	0.553	0.415	1.013	1.034
Gravel								3.138	4.756	0.069	0.303	0.222										
Reconstruction track allowance											0.203	0.270	0.186		0.398		2.303	5.330	8.280	7.070	9.279	1.488
Granite Block track allowance																	2.537		0.204	3.118	1.905	0.188
Vitrified Block track allowance																	0.971	1.144	....			0.700
Asphalt Block, Scoria, Treated Wood Block, Macadam track allowance																						2.281
Totals	17.670	11.090	19.574	18.748	8.154	5.816	3.553	13.208	24.642	21.120	24.666	15.629	17.413	16.839	14.756	17.962	25.097	34.401	39.326	35.046	32.600	30.623
Sidewalks:																						
Concrete	1.426	1.930	1.508	2 259	1.137	1.918	0.612	1.050	2.548	5 474	15.227	17.305	27.360	34.896	31.058	37.500	43.536	58.309	55.101	51.48	54.679	57.361
Stone Flag	1.273	0.398	0.104	0.035	0.011																	
Brick							0.204	0.823	1.188	0.292	0.038	0.511	0.049	0.393	0.001	0 037	0.130		0.303			
Totals	2.699	2.328	1.612	2.294	1.148	1.918	0.816	1.873	3.736	5.766	15.265	17.816	27.409	34.989	31.059	37.537	43.666	58.309	55.404	51.48	54.679	57.361

TABLE No. 3.

SHOWING THE DIFFERENT CLASSES OF PAVEMENTS AND ROADWAYS AND MILEAGE OF SAME FROM 1881 TO 1911.
(Inclusive of paved lanes.)

Year	Cedar Block.	Stone and Scoria.	Asphalt.	Asphalt Block.	Wood on Concrete	Macadam	Tar Macadam.	Bitulithic	Brick.	Gravel.	Concrete.	Unpaved	Total Mileage.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1881	3 51	0 03	.....	.....	.....	50.92	.....	.....	.....	.....	.....	62.39	116 85
1882	13 41	0.03	.....	.....	.....	48.28	.....	.....	.....	.....	.....	55.13	116 85
1883	26 90	0.03	.....	.....	.....	54.37	.....	.....	.....	.....	.....	54.07	135.57
1884	33.76	0 25	.....	.....	.....	52 32	.....	.....	.....	.....	.....	76.77	163.10
1885	39 84	0.25	.....	.....	.....	50.17	.....	.....	.....	.....	.....	75.98	166 24
1886	48 99	0 36	.....	.....	.....	47 36	.....	.....	.....	.....	.....	72.18	168 89
1887	64 11	0.36	0 07	.....	.....	45.14	.....	.....	.....	.....	.....	59 21	168 89
1888	79 55	0 36	0 25	.....	.....	42 76	.....	.....	.....	.....	.....	49 87	172 79
1889	92 39	0 36	3.36	.....	.....	38 65	.....	.....	.....	.....	.....	107 43	242 19
1890	109 57	0 36	5.08	.....	.....	36 63	.....	.....	.....	.....	.....	90.55	242 19
1891	116 83	0 59	6 66	.....	0.49	36.39	.....	.....	.....	.....	.....	89 44	250 40
1892	116.86	0.65	10.49	.....	0.49	36 39	.....	.....	.....	.....	.....	84 89	252 71
1893	112 19	0 79	11 28	.....	0 49	34 98	.....	.....	.....	.....	.....	82.05	253 35
1894	111 16	0 81	13 70	.....	0.49	39.95	.....	.....	.....	.....	.....	79.98	253 48
1895	109 78	0.81	14 38	.....	0.49	39 15	.....	.....	0.38	.....	.....	79 48	256.40
1896	108 70	0.81	14 61	.....	0 53	39 71	.....	.....	1.32	.....	.....	79.74	257.40
1897	101 36	0 81	15 07	.....	0 53	40.50	.....	.....	3.58	3.22	.....	78.45	258.80
1898	94 90	0 65	18.30	.....	0.61	41 91	.....	.....	5.91	4 86	.....	78 67	257.93
1899	81.77	0.65	24 33	.....	0.67	45.03	.....	.....	8 77	5 03	.....	78.14	259 03
1900	70 49	0 68	30.81	.....	0.67	46 69	0.21	.....	10.77	5.34	.....	77 26	259.12
1901	61.48	0.81	34 92	.....	0.67	48 36	0 26	.....	11 53	5.54	.....	77.22	259.60
1902	48.57	0 81	39 75	.....	0.25	50.02	1.12	.....	12.51	5 39	.....	77 66	260 14
1903	43.25	1 15	46 44	.....	0.26	50 11	3.26	.....	14 24	5.87	0.14	79 39	265 40
1904	*54 33	1 11	52 10	.....	0 26	*54.56	4 29	1.59	15 84	5.88	0.20	75 81	265 45
1905	*48 83	1 74	56.29	.....	0.26	*54 92	5 46	3 22	17.14	5.83	0.13	82.36	276 13
1906	*40 53	1.74	64.71	.....	0 51	*54.39	5.70	5 98	18.58	5.83	0 27	80 17	277.46
1907	*32 29	1 64	80 04	0.34	0 66	*47 83	6.43	10 33	20 73	5.10	0.22	73.90	279.51
1908	*24 77	2.36	101 07	0.97	0 45	*44 16	5 71	15.66	23 90	13 65	1 56	71 95	306.31
1909	*17 71	2.34	118 44	4.14	0 49	*45 91	3.88	20 68	25.41	21 15	1.98	145 44	407 57
1910	13 69	2.21	130 93	4.22	0 64	43 53	1 90	26.69	25 97	22 01	2.94	†132 67	†407 40
1911	10.41	2 16	143 51	5.98	0.64	39 11	1 90	31 98	27 55	21 56	3 78	†129 80	†418.38

* Including Cedar Block and Macadam with paved track allowance respectively. † Unpaved Lanes excepted.

gradings, 137 walks, and 63 curbs—and the awards were made accordingly.

There were also 8 pavements and gradings, 26 walks and 2 curbs ordered by Council to be done by day labor without the formality of calling for tenders.

The following is a comparison between the number of plans, drawings and estimates made during 1910 and 1911:

	1910.	1911.
Roadway plans	159	175
Detailed drawings	96	166
Estimates	796	884
Profile plans	269	256
Tracings of contract plans	158	180
Cross sections	63	57
	1,541	1,718

TABLE No. 4.

Asphalt	34.30
Asphalt block	1.43
Bitulithic	7.64
Brick	6.59
Concrete	0.90
Cedar block	2.49
Gravel	5.15
Macadam	9.35
Stone and scoria	0.52
Tar macadam	0.46
Unpaved	31.02
Wood on concrete	0.15
	100.00

ASPHALT PAVEMENTS.

As would be supposed, from a knowledge of the cheapness and durability of asphalt pavement, when considered in relation to other types, it again proved to be the largest factor in this year's paving work.

A total of 72 pavements of all classes were laid, comprising a total yardage of 156,256 square yards. This work was subdivided under the

headings of heavy, medium and light pavements, and one brick pavement surfaced with asphalt, as follows:

	No.	Length.	Yardage.
Heavy asphalt	8	9,170	29,608
Medium asphalt	61	45,394	121,738
Light asphalt	2	1,406	3,698
Brick pavement (surfaced)	1	595	1,212
	72	56,565 ft.	156,256 sq. yds.

A reference to the report of last year (1910) shows that the area laid during 1911 is 11,733 square yards less than that laid in 1910, and that the mileages for 1910 and 1911 are 11.811 miles and 10.713 miles respectively.

It would naturally be assumed, from the above statement, that the Department had fallen behind in this branch of the work, or that the popularity of the asphalt pavement was waning. This, however, is not the case. The area of 156,256 square yards represents only entirely new work, and in addition thereto the Department laid by day labor 26,597 square yards of asphalt, representing 1.96 miles, to replace those pavements which were torn up during the construction of new track allowances. As this work had of necessity to be carried out by day labor, the Department was not a large factor in the laying of new work.

A summary of the previous statements shows that in all there were 182,853 square yards of asphalt, representing a mileage of 12.673 miles laid during 1911.

It must not be overlooked that the above area includes that of the concrete gutters, which were constructed to a width of 12 inches on each side of the pavement.

Below is found a table, brought to date, showing a comparison between the maximum, minimum and average prices for asphalt pavements from 1901 to 1911, inclusive.

TABLE SHOWING COMPARISON BETWEEN MAXIMUM, MINIMUM AND AVERAGE PRICES FOR ASPHALT PAVEMENTS FROM 1901 TO 1911, INCLUSIVE

Year.	Class.	Maximum Cost per Square Yard.	Minimum Cost per Square Yard.	Average Cost per Square Yard.
		$ c.	$ c.	$ c.
1901	Heavy	2 70	2 30	2 54 6/10
"	Light	2 23	1 88	2 04 1/2
1902	Heavy	2 60	2 45	2 54
"	Light	2 15	1 66	2 01 1/4
1903	Heavy	2 50	2 14	2 21 3/5
"	Light	1 88	1 60	1 70
1904	Heavy	2 30	2 15	2 22 6/10
"	Light	1 83	1 53	1 65
1905	Heavy	2 19	1 99	2 05
"	Light	1 66	1 36	1 51
1906	Heavy	2 01	1 79	1 91 4/5
"	Light	1 64	1 38	1 42 2/5
1907	Heavy	2 27	2 14	2 19
"	Light	1 83	1 50	1 62
1908	Heavy	2 33	1 92	2 15 2/3
"	Light	1 96	1 33	1 51 2/3
1909	Heavy	1 95	1 59	1 72 2/3
"	Medium	1 80	1 40	1 60
"	Light	1 44	1 12	1 28
1910	Heavy	2 21	1 88	2 01 8/10
"	Medium	2 00	1 38	1 79 1/10
"	Light	1 60	1 19	1 45 4/10
1911	Heavy	2 25	2 07	2 17 3/10
"	Medium	2 05	1 81	1 96
"	Light	1 57	1 57	1 57

The day labor system, which has proved so satisfactory during the past, was pursued with equal success in 1911. The City Engineer tendered in competition with contractors on 86 asphalt pavements, making due allowance for profit and all overhead charges. In 45 instances the City's figures were found to be the lowest, and the contracts were awarded accordingly. The various contractors subsequently offered to construct 40 of these pavements for the amounts tendered by the City, and the works were therefore transferred to them, the Department constructing the remaining four (4) by day labor. There was also one asphalt pavement ordered by Council to be done by day labor, and two of the 40 transferred were afterwards done by day labor, the one remaining work being carried over to 1912. The total yardage laid

was 8,481 square yards. This yardage is, of course, exclusive of that laid in conjunction with new track allowances.

In addition to the above, the Department made such repairs to the various existing pavements as were, from time to time, required. The total yardage of such repairs being 41,159 square yards, and the average price 44.44 cents per square yard.

Up to the end of 1911 the total yardage upon which the contractors' guarantee has expired, together with that which has been laid by the City, is 667,424 square yards.

Further details regarding repairs are shown in the report on maintenance.

The quantities, prices and other details connected with the asphalt pavements constructed during the year are tabulated in Table No. 5. The physical and chemical analyses of all asphalt mixtures used are tabulated separately in Table No. 17.

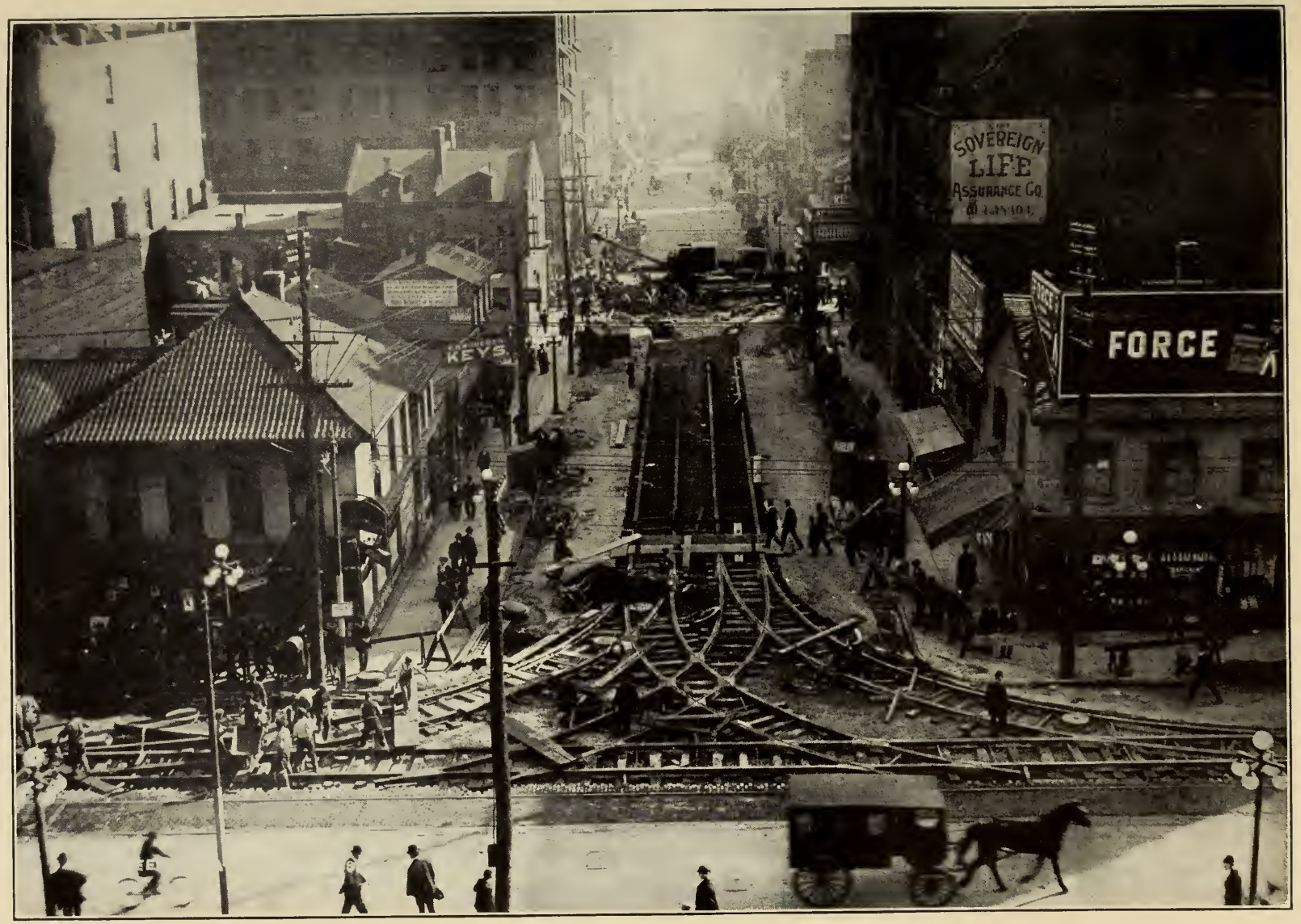
ASPHALT BLOCK PAVEMENTS.

The amount of this class of pavement laid during the past season was considerably in excess of that laid the previous year, the total yardage being 24,175 square yards, as compared with 1,331 square yards during 1910. The mileage represented for the 8 pavements laid is 1.751 miles, and there were laid 12,051 lineal feet of concrete curbing.

In 1909 these blocks were laid on a portion of the Yonge Street track allowance, north of College Street, in order to test out the usefulness of the material for track paving purposes. At the same time and on adjoining pieces of track various other materials, such as treated wooden block, vitrified brick and scoria block, were laid.

The asphalt block were the first type to show signs of wear, and is now in such dangerous and dilapidated condition that it will be absolutely necessary to remove it and replace with some other type as soon as the season of 1912 opens.

From the utter failure of the block in this instance, and the signs of failure apparent in other track allowance pavements, I would strongly oppose the further use of asphalt block for track allowance purposes.



Track Allowance—Intersection of Queen and Bay Streets.

BRICK PAVEMENTS.

27,801 square yards of vitrified brick or block pavement, representing a mileage of 1.183 miles, were laid in 1911, the number of individual works being 12. In conjunction with the above, 9,564 lineal feet of curbs were laid. The above area is 3,389 square yards in excess of that laid last year, and in view of the durability of this type of pavement the public would do well to countenance its use more largely than has been done in the past.

The quality of the blocks, as determined by the standard abrasion test, is indicated by the following ratio:

Canadian (after 1,000 revol.).....18.9 per cent. loss in weight.
American (after 1,000 revol.)..... 8.7 per cent. loss in weight.
Canadian (after 2,000 revol.).....30.6 per cent. loss in weight.
American (after 2,000 revol.).....14.4 per cent. loss in weight.

TRACK ALLOWANCE CONSTRUCTION AND RECONSTRUCTION.

The work of constructing the new track allowance pavements, in conjunction with the laying of the new lines ordered by the Ontario Railway and Municipal Board in 1910, was pushed vigorously during the past year.

In all, 13 new track allowances were constructed, representing a mileage of 3.169 miles, while at the same time 1.488 miles of old track was reconstructed and 26 new intersections were put in.

The above statement represents the largest amount of track work ever carried out by the Department in one year.

As the greater part of this work lay along streets already paved, a great deal of contingent work was necessary. The old pavements, and in most cases the flanking sidewalks, had to be entirely removed and replaced immediately after the completion of the tracks.

A summary of this work shows that 26,597 square yards of asphalt, 6,603 square yards of bitulithic, and 3.867 miles of concrete walks were so replaced.

In addition to the above, such repairs of a minor character as were from time to time required, were made on existing track allowances.

Details of all track work are to be found in Tables Nos 5 and 11. Table No. 15 also shows the streets upon which new steel has been laid since 1906.

TABLE No. 15.

TABLE SHOWING STREETS UPON WHICH NEW STEEL HAS BEEN LAID FROM 1906 TO 1911.

Year.	Street.	From.	To.	Class of Steel.	Length of Track.
*1906	Dupont	Bathurst	Christie	7-in.— 90 lb.	1918 lin. ft. double
*1906	Dupont	Walmer	Bathurst	7 " — 90 "	1634 " "
*1906	Gerrard	Leslie	Greenwood ..	7 " — 90 "	1396 " "
*1906	Gerrard	Pape	Leslie	7 " — 90 "	1977 " "
*1906	Lansdowne Ave.....	College ...	Bloor.	7 " — 90 "	2850 " "
†1906	Richmond ..	York	Victoria	7 " — 90 "	1925 " "
†1906	Scott	Front	Wellington ..	7 " — 90 "	299 " single
†1906	Victoria	Richmond ..	Queen	7 " — 90 "	298 " double
†1906	Wellington .	Scott	Yonge	7 " — 90 "	298 " single
†1906	Lansdowne Ave.	and	College	7 " — 90 "	117 " double
*1906	Avenue Rd .	241 ft. n. Cottingham ..	St. Clair....	7 " — 90 "	1736 " "
*1906	Dovercourt..	Bloor	Van Horne .	7 " — 90 "	3390 " "
†1906	Queen	Yonge	Spadina	7 " — 90 "	4556 " "
†1906	College ...	Grace	Givens	7 " — 90 "	1600 " "
†1906	Gerrard ...	Bridge.....	Munro	7 " — 90 "	328 " "
†1906	Gerrard	Bridge.....	200 ft. west .	7 " — 90 "	200 " "
†1907	King	Spadina	Sherbourne .	7 " — 90 "	6973 " "
†1907	Queen	Don	Broadview ..	7 " — 90 "	1117 " "
†1907	Queen	Spadina ...	Bathurst....	7 " — 90 "	1993 " "
†1907	Queen	Kingston Rd.	Woodbine ..	7 " — 90 "	1887 " "
†1907	Queen	Pape	G. T. R. ...	7 " — 90 "	2165 " "
†1907	Yonge	Bloor	C. P. R.	7 " — 90 "	3962 " "
*1907	Roncesvalles	Queen	Dundas	7 " — 90 "	4944 " "
*1908	Bloor	Dufferin	Lansdowne..	7 " — 90 "	1956 " "
†1908	College	Spadina	McCaul	7 " — 90 "	1697 " "
†1908	Front	Yonge	Church	7 " — 90 "	950 " "
†1908	Front	York.....	Simcoe	7 " — 90 "	630 " single
†1908	King	Spadina ...	Bathurst....	7 " — 90 "	2020 " double
†1908	Queen	Bathurst....	Dundas . ..	7 " — 90 "	4035 " "
*1908	Queen	Roncesvalles Av.	around Sunnyside Loop	7 " — 90 "	490 " "
†1908	Spadina	S.s. Spadina Crescent ..	Bloor	7 " — 90 "	2345 " "
*1908	Springhurst..	Dufferin — we	st and south.	4½ " — 90 "	573 " single
†1909	Queen	Don	Broadview ..	7 " - 90 "	1117 " double
*1909	Gerrard ...	Subway	Pape	7 " — 90 "	702 " " with 108 ft. girder on curves.
†1909	Yonge	College	Bloor	7 " — 90 "	3756 lin. ft. double
*1909	Avenue Rd...	Bloor	Davenport ..	7 " — 70 "	2244 " "
*1909	Shaw	King	Queen	7 " — 70 "	1271 " "
*1909	College	Yonge	McCaul	7 " — 80 "	2806 " "

Year.	Street.	From.	To.	Class of Steel.	Length of Track.
*1909	Arthur ...	Bathurst ...	Ossington ..	7-in.— 70 lb.	3975 lin. ft. double
†1909	Roncesvalles.	Queen	Harvard	7 " — 90 "	485 W. Track
*1909	Roncesvalles.	Queen	Harvard	7 " — 70 "	485 E. Track
	Six Curves	into Barns ..	.....	7 " —108 "	300 lin. ft. single
*1910	Harbord	Ossington ..	Bathurst....	7 " — 70 "	3712 " double
*1910	Wilton	Sherbourne..	Sumach	7 " — 70 "	2730 " "
*1910	Adelaide....	Bathurst....	Spadina	7 " — 70 "	1964 " "
†1910	Queen	Ashdale	Vancouver ..	7 " — 90 "	1173 " "
*1911	Adelaide....	Spadina	Simcoe	7 " — 70 "	249 " "
†1911	Adelaide....	Simcoe	Church ...	7 " — 90 "	3217 " "
†1911	Bay	Queen	Front	7 " — 90 "	2097 " "
*1911	Harbord	Bathurst....	Spadina	7 " — 70 "	2037 " "
*1911	Ossington ..	Harbord	Bloor	7 " — 70 "	1357 " "
†1911	Queen	River	Bridge	7 " — 90 "	425 " "
†1911	Queen	On Bridge (2	Sections). ..	7 " — 90 "	677 " "
†1911	Victoria	Adelaide....	Shuter.....	7 " — 90 "	1385 " "
*1911	Victoria	Shuter	Wilton	7 " — 70 "	513 " "
*1911	Wilton Av...	Victoria	Sherbourne .	7 " — 70 "	2415 " "
*1911	Wilton Av...	River	Bridge	7 " — 70 "	578 " "

* T-rail laid.

† Flange rail laid.

BITULITHIC PAVEMENTS.

The bitulithic pavement again proved itself to be a strong factor in the season's work, a total of 80,520 square yards being laid. 73,917 square yards constituted entirely new work, and 6,603 square yards were relaid in place of those pavements of this type which were destroyed by the construction of new track allowance work.

In conjunction with bitulithic pavements, 21,356 lineal feet of curbs and gutter were constructed.

Exclusive of 4 pavements reconstructed alongside of new tracks, the above 73,917 square yards represents 29 new pavements having a mileage of 5.294 miles. Of these 29 pavements 3 were constructed by day labor, the yardage being 13,974 square yards, and the mileage 0.912 miles.

Further details are to be found in Tables Nos. 5 and 9.

CONCRETE PAVEMENTS.

A total of 18 concrete pavements was laid during the year, and the mileage and yardage represented is 0.853 miles and 6,558 square yards respectively. This is 1,243 square yards less than the amount laid last

year. The pavements were confined entirely to lanes, and it may be expected that within a few years the City will have such a well paved system of lanes that the Department will have very little trouble with a branch of the work which in the past has been very difficult to handle.

In conjunction with the concrete pavements, there were constructed during 1911, 5,018 lineal feet of concrete curbs.

Details are to be found in Tables Nos. 5 and 9.

MACADAM ROADWAYS.

Only one contract was let during the year for the construction of a macadam roadway. There was also one constructed by day labor. The total length laid was 0.385 miles, representing a yardage of 5,628 square yards.

That portion of Yonge Street, from Summerhill Avenue to the north City limits, upon which there is an old macadam road and which the Department has always had great difficulty in maintaining, owing to the enormous traffic passing over it, was twice last year extensively repaired.

The section extending from the south gate of Mount Pleasant Cemetery to the north City limits, a total length of 1,200 lineal feet, was reconstructed for 30 feet of its width with broken stone and a patented preparation sold under the name of "Rocmac." The surface of the old macadam was first swept thoroughly in order to remove as much of the mud as possible. Upon this prepared base a paste consisting of a mixture of limestone dust and rocmac solution was then spread to a depth of about 1½ or 2 inches. The proportions of this mixture were one-third of a cubic yard of dust to five gallons of the solution. Granite crushed to about a 2-inch size was then evenly spread to a depth of from 3 to 4 inches. The pavement was then rolled until the paste worked through the stone from the bottom and formed a slurry on top. All surplus slurry always being swept forward to the head of the work. This character of work depends for its existence largely on the care with which the rolling is done, it being necessary to carry on the rolling constantly until all voids are absolutely filled.

Yonge Street, as has been stated previously, carries perhaps a larger volume of traffic entering and leaving the City than any of the other main entrances, and during the progress of the work described above, this traffic was not interrupted for a moment, all vehicles being allowed

TABLE No. 16.

RECORD OF CEMENT TESTS FROM JULY 1ST, 1910, TO JULY 1ST, 1911.

Brand.	No. of Samples Tested.	Specific Gravity.	Residue in % on Sieves.		Setting in Minutes.		Soundness.	Tensile Strength in Pounds per Square Inch.											Remarks.
								Neat.						3-1.					
			No. 100.	No. 200.	Initial.	Final.		Water.	24 Hours.	7 Days.	28 Days.	3 Months.	1 Year.	Water.	7 Days.	28 Days.	3 Months.	1 Year.	
								%						%					
Belleville	4	3.15	2.2	22.1	204	471	O.K.	20.3	388	719	728	781	787	8.0	296	380	453	494	
Canada	162	3.17	3.1	22.9	186	455	O.K.	19.7	389	648	710	696	822	8.0	282	373	385	438	
Colonial	9	3.14	1.7	18.3	152	366	O.K.	21.7	349	596	659	..	....	8.0	286	360	...	....	
Crown	21	3.16	2.7	21.4	152	426	O.K.	19.8	456	731	732	638	...	8.0	283	349	403	....	
Hanover	1	3.18	1.2	19.9	260	500	O.K.	20.0	476	748	998	....	....	8.0	372	447	....	....	
Hercules	3	3.26	3.3	28.0	232	440	O.K.	19.0	304	543	589	....	....	8.0	212	299	....	....	
International	11	3.15	2.0	19.2	183	435	O.K.	21.0	327	647	726	...	....	8.0	314	405	....	....	
Imperial	12	3.17	3.5	23.4	205	468	8% Failed.	19.0	418	817	845	625	....	8.0	277	324	405	....	
Lehigh	288	3.13	2.7	22.4	186	429	O.K.	20.2	291	640	723	....	....	8.0	257	351	....	....	
Maple Leaf	19	3.19	0.9	15.5	186	470	O.K.	20.2	339	641	730	....	....	8.0	286	370	....	....	
Monarch	2	3.17	2.6	22.6	212	497	O.K.	19.0	470	577	595	....	...	8.0	271	337	....	....	
National	348	3.19	3.2	22.7	185	449	O.K.	19.9	247	722	801	782	867	8.0	280	381	396	437	
Saugeen	61	3.15	2.2	19.8	176	441	O.K.	20.6	439	799	864	822	918	8.0	319	404	387	431	
Star	63	3.17	3.2	23.6	177	444	O.K.	19.7	397	655	731	690	....	8.0	282	384	410	....	
Sterling	75	3.14	2.3	20.6	182	433	8% Failed.	20.6	373	746	778	905	....	8.0	294	367	317	....	
Sun	45	3.18	2.1	21.1	190	445	2% Failed.	19.6	341	654	726	709	850	8.0	256	345	376	460	
Superior	112	3.18	1.2	17.1	178	428	O.K.	19.5	407	726	785	737	774	8.0	329	418	445	490	
Vulcan	1	3.13	2.6	21.5	150	405	O.K.	21.0	381	590	640	....	....	8.0	268	233	....	....	
	1,237																		

to drive over the work no matter what stage it was in. It was found that the roadway when completed, although roughly used, had a very hard, compact surface, and for the few months subsequent to its completion it has carried all traffic without receiving any apparent impression other than that shown in the thin film of mud covering it in wet weather. The cost of the work was about 78 cents per square yard.

Should the results obtained be such as the Department is led to expect they will be, the cheapness of the work, the facility with which the roadway can be laid, will argue strongly in favor of the further use of this preparation on other roads similar to Yonge Street.

EXHIBITION PAVEMENTS.

Last May the Department was requested by the Board of the Industrial Exhibition to pave a number of the roadways in Exhibition Park, and during the ensuing months a large force of men was kept constantly at work on the pavements decided upon.

The following tabulated statement shows the various classes of pavement laid and the amount of each:

Asphalt	5,008	sq. yds.
Asphalt macadam	24,667	"
Endurite	4,756	"
Tarvia	1,083	"
Total	35,514	"

Reduced to a width of 24 feet, this area represents a mileage of 2.52 miles.

The above are all sheet pavements, and considerable difficulty was experienced in places owing to the boggy nature of the sub-grade. The finished work, however, presented a very good appearance, and it is probable that further work of this nature will be gone on with during the coming season.

In conjunction with the pavement work, 9,389 lineal feet, or 1.778 miles of concrete curb and gutter were constructed.

In addition to the pavement work a concrete stage, 2,548 square yards in extent, was laid in front of the Grand Stand. This stage gave excellent results, as it enabled the management to carry on the per-

formance in all weathers, whereas formerly they were at times compelled to cancel performances on account of rain.

There were also constructed 8,931 square feet of concrete walk.

Further details of all Exhibition work are to be found in the following tables:

EXHIBITION GROUNDS.

Improvements in 1911.

Concrete Walks and Curbs.

8-ft. concrete walk and curb around Gooderham Fountain, length	160.7 ft.
6-ft. concrete walk at s.-e. corner Horticultural Building, length	50.0 ft.
5½-ft. concrete walk and curb at n.s. of Stove Building, length	154.0 ft.
7½-ft. concrete walk and curb at n.s. of Stove Building, length	12.0 ft.
5½-ft. concrete walk at n.s. Stove Building, length	39.0 ft.
8-ft. concrete walk at Dufferin Street entrance, length	63.0 ft.
6.7-ft. concrete walk opposite Administration Building, length	51.0 ft.
4.9-ft. concrete walk opposite Administration Building, length	35.5 ft.
5-ft. concrete walk, Educational Building, length	339.5 ft.
5½-ft. concrete walk, Educational Building, length	63.0 ft.
250 square feet opposite Educational Building	
6-ft. concrete walk on w.s. roadway running north from n.-w. corner of Grand Stand, length	381.7 ft.
Miscellaneous sections, reduced to length of 5-ft. concrete walk	120.0 ft.

Summary—

Total areal of concrete walk	8,931 sq. ft.
Reduced to length of 5-ft. walk	1,786.2 lin. ft.
Length of concrete curb	415 "

Pavements.

(1) Asphalt	5,008 sq. yds.
On Dufferin Street, from s.s. of roadway running east from Dufferin Street, south of main entrance, to the south side of Horticultural Building.	
On roadway on south side of Horticultural Building.	
(2) Asphalt Macadam	24,667 sq. yds.
On Dufferin Street, from bridge to s.s. of first roadway running east	
On first roadway south of main entrance from Dufferin Street easterly and southerly to north side of Horticultural Building.	

Asphalt Macadam—Main Intersection Exhibition Park.

On roadway north of Horticultural Building.
On main roadway from s.s. of Horticultural Building, past Gooderham Fountain, opposite Dairy Building, Manufacturers' Building and Press Building, and opposite the north side of the Grand Stand to the east end of the Grand Stand.
On roadway at west end of Grand Stand.
On roadway at west end of Manufacturers' Building.
On roadway on north, east and south sides of Transportation Building.

(3) Endurite Pavement ..... 4,756 sq. yds.
On roadway on east side of Horticultural Building.
On roadway on east side of Grand Stand.
On roadway on north side of Educational Building.

(4) Tarvia Macadam ..... 1,083 sq. yds.

Total ..... 35,514 sq. yds.
On roadway on south side of Administration and Industrial Building.

Concrete Platform in front of Grand Stand..... 2,548 sq. yds.

In connection with the above pavements, 9,389 lineal feet of curb and gutter were laid, and 2,511 lineal feet of gutter only. The gutter was 24 inches wide.

The total expenditure for the above work was $50,595.71.

CONCRETE SIDEWALKS.

There were constructed during the year a total of 444 concrete walks, of which 407 were laid as local improvements, 13 by private contract under City supervision, 15 reconstructed along new track routes, 8 in Exhibition Park under special appropriation, and 1 between the Dundas Street bridges.

The total length of walk laid was 57.361 miles and there were 29.346 miles of concrete curbs laid in conjunction therewith.

The total mileage of concrete walks now in the City is 501.931 miles, which, together with 3.667 miles of brick walk, makes a total of 505.598 miles of permanent walks.

Details are to be found in Tables Nos. 5 and 8.

MAINTENANCE DEPARTMENT.

The work executed and supervised by the Maintenance Branch of the Roadways Office for the year 1911, is as follows:

MACADAM ROADWAYS.

The macadam roadways tabulated below have been resurfaced for the costs indicated. These thoroughfares are now in fair condition, but it will be necessary in some instances to make extensive repairs again during the coming year, as it is impossible, with the materials available, to make such repairs as will stand up under the great volume of traffic to which they are subjected.

The following macadam roadways were resurfaced:

Don Mills Road, from Danforth to north City limits	$781 17
Queen Street, from Greenwood Avenue to Kingston Road	5,590 49
Queen Street, from Woodbine Avenue to Leuty	1,929 11
Kingston Road, from Queen Street to east City limits	1,386 31
Main Street, from Kingston Road to north City limits	1,658 94
Danforth Avenue, from Main Street to Barrington Avenue	77 45
St. Lawrence Street, from King Street to Eastern Avenue	585 37
Eastern Avenue, from Sackville to Don Esplanade	1,599 69
Mill Street, from Overend to Cherry Street	2,272 05
Cherry Street, from Eastern Avenue to the bridge	2,741 10
Bay Street, from Harbor to Lake Street	57 86
St. Vincent Street, from Grenville to St. Albans Street	680 94
Queen's Park roadways	469 59
Cottingham Street, from Yonge to C. P. R.	44 64
Marlborough Avenue, from Avenue Road to 700 feet east	107 15
Yonge Street, from Summerhill Avenue to north City limits	6,843 59
Davenport Road, from Madison to Spadina	165 50
Ossington Avenue, from Bloor to C. P. R.	114 80
Bathurst Street, from Davenport to Vaughan Road	939 99
Front Street, from Trinity Street to Cypress Street	600 93
St. Clair Avenue, from G. T. R. to Dodds Road	563 25
Weston Road, from Dundas to north City limits	1,476 44
Dundas Street, from Gilmour westerly	943 41
Austin Terrace	369 08
Walmer Road Hill	135 32
Junction Road, from Mulock Avenue to Weston Road	362 20
Runnymede Road, from Private Road to Ardagh	290 68
St. Clair Avenue, from Dods Avenue to Symes Road	53 84
St. John's Road, from Dundas to Fairview	87 50
Bruce Street, from Dundas Street to Weston Road	51 50

TABLE No. 17.

DETAILED ANALYSES OF ASPHALTS AND ASPHALT MIXTURES, 1911.

Street.	From	To	Contractor	Asphalt Used.	Bitumen in Surface Mixture		Temperature of Surface Mixture		Penetration of Asphaltic Cement (Dow's Machine)	Refined Asphalt.				Sand Grading							Limestone Dust Grading.					
					Maximum.	Minimum.	Max.	Min.		Physical Examination.		Chemical Analyses.														
							° Fah.	° Fah.		Flowing Point.	Specific Gravity.	Bitumen soluble in Carbon Bisulphide.	Organic matter insoluble.	Mineral Matter (Ash).	Bitumen soluble in Chloroform.	Bitumen soluble in Carbon Tetrachloride.	Fixed Carbon.	On No. 10 Sieve.	Pass No. 10 Sieve.	Pass No. 30 Sieve.	Pass No. 40 Sieve.	Pass No. 50 Sieve.	Pass No. 80 Sieve.	Pass No. 100 Sieve.	Pass No. 200 Sieve.	On No. 30 Sieve.	Pass No. 40 Sieve.	Pass No. 80 Sieve.	Pass No. 100 Sieve.	Pass No. 200 Sieve.
					%	%												%	%	%	%	%	%	%	%	%	%	%
Armstrong	1,370 ft. w. Dufferin	Emerson	Godson Contracting Co	Hydrolene (hard)	11.83	10.98	320	270	235	1.121	98.44	5.85	.51	69.83	88.14	23.67												
				Hydrolene (soft)	11.40	11.20	310	260	240	1.065	98.26	1.13	.49	70.91	91.97	17.66	0.5	4.0	7.0	14.0	16.5	22.0	21.5	9.0	5.5	2.0	6.0	12.0	18.8	64.0
Antler	Perth	East end	"	Texas C	10.95		320	280	240	1.025	98.85	74	.41	69.83	78.62	17.97	0.0	3.0	11.0	13.0	24.0	20.0	19.0	10.0	0.0	2.0	8.0	28.0	84.0
Arva	St Clair	Pleasant Blvd	"	"	10.95		320	280	240	1.023	98.85	74	.41	69.83	98.62	17.97	0.5	2.5	2.9	4.5	16.0	17.5	21.0	27.0	15.0	2.0	4.0	8.0	12.0	74.0
Aylmer	Sylvia	Suho	Constructing & Paving Co	Californian	10.49		320	280	172	1.054	98.44	74	.51	74.41	94.49	16.86												
				Hydrolene (hard)	11.63		320	280	240	1.052	98.04	1.40	.56	74.38	94.98	16.86	2.0	3.0	7.0	7.0	11.0	20.0	26.0	21.0	7.0	2.0	4.0	10.0	20.0	64.0
				Hydrolene (soft)	11.03		320	280	240	1.047	98.23	1.11	.56	74.47	97.58	17.41	0.0	0.0	2.0	4.0	8.0	23.0	27.0	23.0	13.0	0.0	2.0	4.0	6.0	80.0
Bathurst	Niagara	King	Barber Asphalt Paving Co	Barber Asphalt Paving Co	9.10				52	1.047	98.23	1.11	.66	74.47	97.58	17.41	0.0	5.0	5.5	8.0	15.0	30.0	20.0	10.0	8.5	0.0	2.0	8.0	12.0	80.0
Barrett	150 ft. e. Chelsea	Eden	City Engineer	Hydrolene	11.40	10.72	320	54	240	1.049	98.26	2.78	36.94	38.48		8.37	2.0	1.5	1.5	4.5	10.5	17.5	17.5	29.0	16.0	2.0	3.0	13.0	74.0	
Bowden	Danforth	Hogarth	Barber Asphalt Paving Co	Californian and Hydrolene	10.69				52	1.047	98.23	1.11	.66	74.47	97.58	17.41	0.0	0.0	2.8	4.8	8.0	23.0	27.0	23.0	13.0	0.0	2.0	4.0	6.0	80.0
Beatrice	242 ft. n. College	141 ft. nor.	Constructing & Paving Co	"																								
College	Manning	Dovercourt Rd	Constructing & Paving Co	Californian and Hydrolene	11.80	9.84	54	386	200	See footnote								2.5	3.6	3.5	9.5	11.5	22.5	22.5	15.5	9.5	5.0	8.5	8.0	16.5	68.0
College	Manning	Dovercourt	Constructing & Paving Co	Hydrolene (north side)					194																			
				Californian (north side)					194																			
				Hydrolene (south side)					194	1.052	98.04	1.40	.56	74.38	94.98	16.87												
				Trinidad (south side)					212	1.052	98.04	85	7.12	69.27	80.94	12.69												
Carlaw	Frizzell	Danforth	Barber Asphalt Paving Co	Trinidad Pitch Lake	12.20	10.94	57	325	260	1.049	98.26	3.78	36.94	38.48		8.37	1.0	1.5	2.0	10.5	15.0	25.5	19.5	16.5	8.5	2.0	8.0	8.0	24.0	60.0
Dingwall	Pape	630 ft. east	"	"	11.59	11.46	50	320	275	1.035	98.08	5.37	35.69	38.18		9.28	1.5	2.5	3.6	10.0	13.0	27.0	19.0	15.5	7.0	0.0	2.0	2.0	6.0	90.0
Dublin	St. Helen's	West end	Constructing & Paving Co	Trinidad					212	1.049	98.23	85	7.12	69.27	80.94	12.69												
				Hydrolene	11.01		44	360	240	1.052	98.04	1.40	.56	74.38	94.98	16.86	2.5	3.0	3.5	4.5	11.0	17.0	27.0	20.0	8.5	8.5	4.0	8.5	12.0	12.0	64.0
				"					212	1.052	98.04	1.40	.56	74.38	94.98	16.86												
Delaware	Geary	Davenport Rd	"	"	10.61	9.86	28	360	240	1.052	98.04	1.40	.56	74.38	94.98	16.86	3.0	4.0	4.5	12.0	16.0	26.0	22.0	8.0	4.5	2.0	8.0	16.0	26.0	64.0
Edmund	Ruskin	North end	"	"					194	1.052	98.04	1.40	.56	74.38	94.98	16.86												
				Texas					240	1.034	98.25	74	.32	68.63	99.17	18.54												
Edgewood Cres	Summerhill	North end	Godson Contracting Co	Trinidad	9.98	9.58	38	400	240	1.060	98.48	1.19	8.33	72.62	90.02	11.54	3.0	13.0	16.5	24.0	14.0	18.0	7.5	3.0	1.0	2.0	6.0	8.0	20.0	64.0
Enfield	Queen	Roncesvalles	Constructing & Paving Co	Californian	11.69	10.69	70	340	240	1.065	98.35	1.13	.41	69.83	98.62	17.97	0.5	6.5	7.0	9.0	11.0	29.5	23.0	26.0	10.5	0.0	2.0	8.0	14.0	76.0
				Hydrolene					194	1.056	99.44	42	.14	72.41	93.49	16.88												
Esther	Frizzell	Danforth	Barber Asphalt Paving Co	Trinidad	10.53		54	310	260	1.049	98.26	3.78	36.94	38.48		8.37	1.0	1.5	2.0	10.5	15.0	25.5	19.5	16.5	8.5	2.0	8.0	8.0	24.0	60.0
Empire	Queen	Eastern	"	Trinidad Pitch Lake	12.21	11.38	49	370	260	1.049	98.26	3.78	36.94	38.48		8.37	1.5	3.0	2.5	8.5	13.0	22.0	29.5	18.5	10.5	0.0	4.0	8.0	12.0	76.0
Fenwick	Danforth	640 ft. south	"	Barbadoes	9.83	9.65	26	255	245	1.084	99.67	3.17	3.76	70.43	93.32	13.17	1.0	3.0	3.0	9.0	12.0	26.0	20.0	16.0	10.0	0.0	1.0	3.0	8.0	88.0
Foster Pl	Elizabeth	East end	City Engineer	"	9.40		34	320	260	1.047	98.23	1.11	.66	74.47	97.58	17.41	0.0	0.0	2.0	4.0	8.0	23.0	27.0	23.0	13.0	0.0	2.0	4.0	6.0	80.0
Frazer	Pape	Carlaw	Barber Asphalt Paving Co	Barbadoes	9.48		28	305	255	1.084	99.67	3.17	3.76	70.43	93.32	13.17	2.0	3.0	3.0	9.0	13.0	27.0	22.0	11.0	8.0	0.0	4.0	9.0	16.0	83.0
Frith	Pape	Carlaw	"	Trinidad					212	1.049	98.23	85	7.12	69.27	80.94	12.69												
Follis	Clinton	Christie	"	Hydrolene	10.58		37	360	240	1.052	98.04	1.40	.56	74.38	94.98	16.86	2.5	3.0	3.5	4.5	11.0	17.0	27.0	20.0	8.5	8.5	4.0	8.5	12.0	12.0	64.0
				"					212	1.052	98.04	1.40	.56	74.38	94.98	16.86												
Gormley	Lawton	West end	Godson Contracting Co	Trinidad	10.84	13.25	28	350	270	1.065	98.35	1.13	.49	70.91	91.93	17.66	0.5	4.0	7.0	14.0	16.5	22.0	21.5	9.0	5.5	2.0	6.0	12.0	18.0	64.0
				Hydrolene (hard)	10.84		28	350	240	1.060	98.48	1.19	8.33	72.62	90.02	11.54	3.0	13.0	16.5	24.0	14.0	18.0	7.5	3.0	1.0	2.0	6.0	8.0	20.0	64.0
Gull	Gerrard	Dupont	Barber Asphalt Paving Co	Barbadoes	10.18		23	340	260	1.084	99.67	3.17	3.76	70.43	93.32	13.17	1.0	3.0	3.0	9.0	12.0	26.0	20.0	16.0	10.0	0.0	1.0	3.0	8.0	88.0
Geoffrey	Indian Rd	Keele	Constructing & Paving Co	Californian					194	1.056	99.44	42	.14	72.41	93.49	16.88												
				Trinidad	10.50	10.40	33	340	260	1.060	98.48	1.19	8.33	72.62	90.02	11.54	2.0	5.0	6.0	11.0	18.0	32.0	2.0	9.0	2.0	6.0	4.0	10.0	20.0	66.0
Geary	Dennington	Dufferin	"	"					212	1.049	98.23	85	7.12	69.27	80.94	12.69												
				"	10.53	10.42	28		194	1.060	98.48	1.19	8.33	72.62	90.02	11.54	4.5	7.0	7.0	15.5	16.0	22.5	15.0	7.5	5.0	2.0	4.0	8.0	10.0	78.0
Hastings	Queen	Dosl	"	Barbadoes	10.31	9.56	36	310	240	1.084	99.67	3.17	3.76	70.43	93.32	13.17	1.5	2.0	2.0	6.0	12.0	32.0	16.0	15.5	10.0	0.0	4.0	8.0	16.0	72.0
Harbord	Manning	Dovercourt	Godson Contracting Co	Trinidad					212	1.049	98.23	85	7.12	69.27	80.94	12.69												
				Texas B	11.05	10.07	36	320	240	1.025	98.85	74	.42	69.83	98.62	17.97	0.0	1.5	2.0	6.0	9.0	29.0	19.0	13.5	2.0	8.0	10.0	16.0	64.0	
*Howard Pk Ave	Indian Rd	West end	"	Californian	12.01	11.01	54	310	220	1.053	99.04	1.40	.56	74.38	94.98	16.86	6.0	5.0	4.0	11.5	9.5	21.0	29.0	10.0	7.5	0.0	8.0	16.0	16.0	60.0
Hampton	Danforth	Hogarth	Barber Asphalt Paving Co	Barbadoes	9.85	9.27	34	310	260	1.084	99.67	3.17	3.76	70.43	93.32	13.17	2.0	3.0	3.0	10.0	12.5	28.5	19.0	14.0	10.0	0.0	2.0	12.0	8.0	84.0
Henderson	Manning	Clinton	Constructing & Paving Co	Californian					194	1.079	99.66	85	7.12	69.27	80.94	12.69												
				Hydrolene	9.69		44	320	240	1.052	98.04	1.40	.56	74.38	94.98	16.86	1.0	2.5	6.0	18.0	22.0	27.0	14.5	8.0	6.0	4.0	10.0	14.0	12.0	60.0
Hook	Woodville	Bruce	"	"					194	1.052	98.04	1.40	.56	74.38	94.98	16.86												
				Trinidad	10.71		31	370	270	1.060	98.48	1.19	8.33	72.62	90.02	11.54	3.0	13.0	16.5	24.0	14.0	18.0	7.5	3.0	1.0	2.0	6.0	8.0	20.0	64.0
Hurndale	Ellerbeck	Jackman	Barber Asphalt Paving Co	Trinidad Pitch Lake	11.95	10.95	60	360	260	1.049	98.26	3.78	36.94	38.48		8.37	1.0	1.5	2.0	10.5	15.0	25.5	19.5	16.5	8.5	2.0	8.0	8.0	24.0	60.0
Hyslop	Queen	South end	Constructing & Paving Co	"	11.25	11.29	41	365	260	1.049	98.26	3.78	36.94	38.48		8.37	1.0	1.5	2.0	10.5	15.0	25.5	19.5	16.5	8.5	2.0	8.0	8.0	24.0	60.0
Laburnum	Jamieson	Dowling	"	Californian					194	1.056	99.44	42	.14	72.41	93.49	16.88												
				Hydrolene	10.30	10.16	52	320	240	1.052	98.04	1.40	.56	74.38	94.98	16.86	2.0	4.5	4.5	10.5	13.0	20.0	19.5	19.0	6.5	1.5	5.0	6.0	20.0	68.0
Loudon	Bathurst	Manning	"	"					172	1.056	99.44	42	.14	72.41	93.49	16.88												
				"	10.71	10.21	47	310	240	1.052	98.04	1.40	.56	74.38	94.98	16.86												
Lawton	Yonge	North end	Godson Contracting Co	Texas C	9.59		52	330	240	1.025	98.85	74	.41	69.83	98.62	17.97	0.0	1.0	1.0	8.0	12.0	32.5	24.5	14.5	7.5	0.0	0.0	4.0	16.0	80.0
Lyndhurst	Widmer Rd	Bernard	"	Barbadoes	10.10	9.33	30	310	240	1.084	99.67	3.17	3.76	70.43	93.32	13.17	1.0	3.0	3.0	9.0	12.0	26.0	20.0	16.0	10.0	0.0	1.0	3.0	8.0	88.0
Mutual	Gould	Wilton	Barber Asphalt Paving Co	Trinidad Pitch Lake	11.31	11.25	55	318	270	1.049	98.26	3.78	36.94	38.48		8.37	1.0	1.5	2.0	10.5	15.0	25.5	19.5	16.5	8.5	2.0	8.0	8.0	24.0	60.0
Marion	21 ft. e. Sorauren	340 ft. west	Godson Contracting Co	Texas C	10.36	10.12	28	350	270	1.025	98.85	74	.41	69.83	98.62	17.97	0.0	1.0	1.0	8.0	12.0	32.5	24.5	14.5	7.5	0.0	0.0	4.0	16.0	80.0
Montrose	290 ft. e. Bathurst	200 ft. e. of Harbord	Constructing & Paving Co	Trinidad					212	1.049	98.23	85	7.12	69.27	80.94	12.69												
				Trinidad	12.10	9.88	53		180	1.060	98.48	1.19	8.33	72.62	90.02	11.54	4.5	7.0	7.0	15.5	16.0	22.5	15.0	7.5	5.0	2.0	4.0	8.0	10.0	78.0
Mudrey	Dufferin	Sheridan	Godson Contracting Co	Texas	11.21	10.22	29	380	270	1.025	98.85	74	.41	69.83	98.62	17.97	0.0	2.5	2.0	4.5	10.0	17.5	21.0	27.0	15.0	2.0	4.0	8.0	12.0	74.0
Nine	Holburn	Lyndhurst	Constructing & Paving Co	"					194	1.034	99.23	55	.22	68.63	99.17	18.43												
				Trinidad	11.43	11.38	38		180	1.060	98.48	1.19	8.33	72.62	90.02	11.54	6.0	9.0	7.0	14.0	15.0	20.5	14.0	10.0	4.5	0.0	4.0	8.0	12.0	76.0
Palmerston Gardens	Palmerston	Manning	Constructing & Paving Co	Trinidad					212	1.049	98.23	85	7.12	69.27	80.94	12.69												
				Hydrolene	9.77		37	320	240	1.052	98.04	1.40	.56	74.38	94.98	16.86	1.0	3.0	4.0	11.0	17.0	27.0	20.0	8.5	8.5	4.0	8.0	12.0	12.0	64.0
Pleasant Blvd	Pleasant	Avora	"	Texas B	11.14	9.74	44	340	285	1.025	98.85	74	.41	69.83	98.62	17.97	0.0	1.0	2.0	6.0	9.0	29.0	25.0	26.0	10.5	0.0	0.0	4.0	16.0	80.0
Playter Blvd	Danforth	Playter Cres	Barber Asphalt Paving Co	Trinidad Pitch Lake	11.46	11.35	64	320	270	1.049	98.26	3.78	36.94	38.48		8.37	1.0	1.5	2.0	10.5	15.0	25.5	19.5	16.5	8.5	2.0	8.0	8.0	24.0	60.0
Rebecca	Gerrard	Dundas	"	Barbadoes	9.99		32	290	255	1.084	99.67	3.17	3.76	70.43	93.32	13.17	1.0	3.0	3.0	9.0	12.0	26.0	20.0	16.0	10.0	0.0	1.0	3.0	8.0	88.0
Ridout	Macdonell	148 ft. east	Constructing & Paving Co	Trinidad					212	1.049	98.23	85	7.12	69.27	80.94	12.69												
				Hydrolene	10.37		41	340	240	1.052	98.04	1.40	.56	74.38	94.98	16.86	2.5	3.0	3.5	4.5	11.0	17.0	27.0	20.0	8.5	8.5	4.0	8.5	12.0	12.0	64.0
Ritchie	Dundas	North end	"	"					194	1.052	98.04	1.40	.56	74.38	94.98	16.86												
				Trinidad	11.42		38	400	260	1.060	98.48	1.19	8.33	72.62	90.02	11.54	3.0	13.0	16.5	24.0	14.0	18.0	7.5	3.0	1.0	2.0	6.0	8.0	20.0	64.0
Rusholme Rd	Dundas	St. Anne's Rd	"	"					212	1.049	98.23	85	7.12	69.27	80.94	12.69												
				Hydrolene	10.60		42	330	215	1.052	98.04	1.40	.56	74.38	94.98	16.86	3.0	5.5	6.0	14.0	15.5	26.0	20.5	8.5	1.5	2.0	4.0	10.0	16.0	68.0
St David	Sumach	Sackville	Barber Asphalt Paving Co	Trinidad Pitch Lake	11.39		50	370	270	1.049	98.26	3.78	36.94	38.48		8.37	1.0	1.5	2.0	10.5	15.0	25.5	19.5	16.5	8.5	2.0	8.0	8.0	24.0	60.0
St Clair	Yonge	190 ft. east	"	Hydrolene (hard)					194	1.052	98.04	1.40	.56	74.38	94.98	16.86												
				Hydrolene (soft)	10.96	10.10	33	335	240	1.065	98.35	1.13	.49	70.91	91.93	17.66	0.0	0.6	1.0	3.0	7.5	18.0	31.0	26.0	18.0	0.0	2.0	10.0	16.0	72.0
St. Clair	100 ft. e. of Yonge	East end	"	"					194	1.052	98.04	1.40	.56	74.38	94.98	16.86												
				Hydrolene (soft)	10.96	10.16	33	335	260	1.065	98.35	1.13	.49	70.91	91.93	17.66	0.0	0.6	1.0	3.0	7.5	18.0	31.0	26.0	18.0	0.0	2.0	10.0	16.0	72.0
Sydenham	Parliament	Sumach	"	Texas C	10.93	10.41	30	370	240	1.025	98.85	74	.41	69.83	98.62	17.97	0.0	1.0	1.0	8.0	12.0	32.5	24.5	14.5	7.5	0.0	0.0	4.0	16.0	80.0
Salisbury	192 ft. w. Sackville	Metcalf	"	"	10.60		25	325	260	1.025	98.85	74	.41	69.83	98.62	17.97	0.0	3.0	3.0	8.0	10.5	13.5	37.0	18.5	9.0	4.5	2.0	4.0	6.0	20.0	68.0
St David	Sackville	Parliament	Barber Asphalt Paving Co	Barbadoes	10.54	9.90	28	310	260	1.084	99.67	3.17	3.76	70.43	93.32	13.17	2.0	3.0	2.5	5.5	11.0	26.0	21.0	7.0	6.0	2.0	4.0	8.0	14.0	78.0
Strathcona	Caslaw	Pape	"	Pape	11.90	10.26	50	340	260	1.049	98.26	3.78	36.94	38.48		8.37	1.0	1.5	2.0	10.5	15.0	25.5	19.5	16.5	8.5	2.0	8.0	8.0	24.0	60.0
Sackville	Queen	Wilton	City Engineer	Hydrolene	10.97	10.57	45		194	1.047	98.23	1.11	.66	74.47	97.58	17.41	0.0	0.0	1.0	4.0	8.0	23.0	27.0	23.0	13.0	0.0	2.0	4.0	6.0	80.0
Somerset	Geary	Davenport	Godson Contracting Co	"	11.31	10.39	39	360	240	1.052	98.04	1.40	.56	74.38	94.98	16.86	2.5	3.0	3.5	4.5	11.0	17.0	27.0	20.0	8.5	8.5	4.0	8.5	12.0	12.0	64.0
Sunnyside	Wright	Gordon	"	Texas					240	1.034	98.25	74	.32	68.63	99.17	18.43												
				Trinidad	10.11	10.02	36	360	240	1.060	98.48	1.19	8.33	72.62	90.02	11.54	2.0	5.0	6.0	11.0	18.0	32.0	2.0	9.0	2.0	6.0	4.0	10.0	20.0	66.0
Summerhill	W. line lot No. 1	E. line lot No. 28	Godson Contracting Co	Texas C	10.14	9.48	33	340	260	1.025	98.85	74	.41	69.83	98.62	17.97	0.0	1.0	1.0	8.0	12.0	32.5	24.5	14.5	7.5	0.0	0.0	4.0	16.0	80.0
Sutton	73 ft. n. Thomas	144 ft. east	"	"	11.14		34	390	260	1.025	98.85	74	.41	69.83	98.62	17.97	0.0	0.5	2.0	6.0	11.0	28.5	23.0	26.0	10.5	0.0	2.0	8.0	14.0	76.0
Selby	Huntley	Sherbourne	Constructing & Paving Co	Texas					240	1.034	98.25	74	.32	68.63	99.17	18.43												
				Trinidad	11.59	10.74	44	380	240	1.060	98.48	1.19	8.33	72.62	90.02	11.54	1.0	1.5	2.5	5.0	14.0	24.0	23.0	21.0	12.0	2.5	4.0	8.0	12.0	74.0
Shaw	Essex	C. P. R Tracks	Godson Contracting Co	Hydrolene	10.60	10.21	28	350	260	1.052	98.04	1.40	.56	74.38	94.98	16.86	6.0	9.0	9.5	16.0	18.0	19.5	12.0	6.0	2.0	4.0	8.0	12.0	12.0	64.0
Temperance	12 ft. e. Bay	40 ft. e. Shipyard	"	"	10.35		26	320	260	1.025	98.85	74	.41	69.83	98.62	17.97	0.0	3.5	3.0	6.0	10.5	24.5	18.0	31.0	15.0	2.0	4.0	12.0	16.0	56.0
Tecumseh	King	322 ft. e. of Niagara	Barber Asphalt Paving Co	Trinidad Pitch Lake	12.14	11.30	40	320	240	1.049	98.26	3.78	36.94	38.48		8.37	0.5	1.5	2.0	10.5	15.0	25.5	19.5	16.5	8.5	2.0	8.0	8.0	24.0	60.0
Wallace	Perth	Railway Tracks	Godson Contracting Co	Hydrolene (hard)					194	1.056	99.44	42	.14	72.41	93.49	16.88												
				Hydrolene (soft)	10.83		30	320	240	1.065	98.35	1.13	.49	70.91	91.93	17.66	1.5	12.0	5.0	7.5	7.0	13.5	17.5	29.0	11.0	2.0	4.0	10.0	28.0	64.0
Waverley Rd	Queen	Kingston	"	Barbadoes	10.36	9.91	36	300	260	1.084	99.67	3.17	3.76	70.43	93.32	13.17	1.0	3.0	3.0	9.0	12.0	26.0	20.0	16.0	10.0	0.0	1.0	3.0	8.0	88.0
Wilton	Bruce	Parliament	City Engineer	Hydrolene	12.26	10.54	30		194	1.056	99.44	42	.14	72.41	93.49	16.88	0.0	1.5	2.0	6.0	12.5	29.0	24.0	17.0	8.0	4.0	8.0	8.0	18.0	82.0
Wilton	Sherbourne	Parliament	Godson Contracting Co	"	11.99	9.14	30	350	270	1.025	98.85	74	.41	69.83	98.62	17.97	0.0	1.0	1.0	8.0	12.0	32.5	24.5	14.5	7.5	0.0	0.0	4.0	16.0	80.0
Worcester	Pape	Carlaw	Barber Asphalt Paving Co	Trinidad Pitch Lake	11.35	11.13	51	310	250	1.049	98.26	3.78	36.94	38.48		8.37	2.0	1.5	2.0	10.5	15.0	25.5	19.5	16.5	8.5	2.0	8.0	8.0	24.0	60.0
Yarmouth Gardens	21 ft. e. Palmerston	16 ft. e. of Manning	"	Californian	10.94	9.36	38	290	245	1.079	99.66	85	7.12	69.27	80.94	12.69												
Wilton	Bridge		City Engineer	Hydrolene	10.10		35		194	1.056	99.44	42	.14	72.41	93.49	16.88	0.0	1.5	2.0	6.0	12.5	29.0	24.0	17.0	8.0	4.0	8.0	8.0	18.0	82.0
				Trinidad					212	1.049	98.23	85	7.12	69.27	80.94	12.69												
Repairs—General			City Engineer	Hydrolene	10.38	8.87	42		194	1.050	97.78	2.91	.21	72.96

Glenholme Drive, from Evelyn Crescent to Kennedy Avenue.....	107 12
Dundas Street, from Gilmour Avenue to Runnymede Road, resurfaced with tarvia macadam	569 15
Total	$33,656 16

The cost of resurfacing in 1911 was $33,656.16, while the expenditure in 1910 was $27,502.74.

The following list of macadam roadways were repaired from time to time, as occasion demanded, and kept in a safe and passable condition for traffic. Their condition was such as not to warrant a complete resurfacing:

Don Mills Road, Eastern Avenue, Riverdale Avenue, McGee Street, DeGrassi Street, Caroline Avenue, Munro Street, Queen Street, Logan Avenue, First Avenue, Hogarth Avenue, Victor Avenue, Winchester Street, Curzon Street, Simpson Avenue, Langley Avenue, Beech Avenue, Kingston Road, Main Street, Bowman Street, Carlton Street, Cornwall Street, Cypress Street, Cherry Street, Bell Street, Dalhousie Street, Frederick Street, Gerrard Street, Gloucester Street, St. George Street, Homewood Avenue, Hayden Street, Isabella Street, St. Lawrence Street, Maitland Street, Mill Street, Overend Street, Pembroke Street, Princess Street, Parkview Avenue, River Street, Sackville Street, Sumach Street, Spruce Street, Shuter Street, Suffolk Place, Wellesley Street, Water Street, Wascana Street, Agnes Street, Balmuto Street, Bay Street, Breadalbane Street, Chapel Street, Charles Street, Denison Avenue, Division Street, Eden Street, Edward Street. Elizabeth Street, Elm Street, Esplanade Street, Grange Avenue, Grange Road, Grenville Street, Grosvenor Street, Inkerman Street, Irwin Avenue, John Street, Lake Street, Niagara Street, North Street, Queen's Park Crescent, St. Albans Street, St. Andrew's Street, St. Joseph Street, St. Mary Street, St. Nicholas Street, St. Thomas Street, St. Vincent Street, Spadina Avenue (south), Surrey Place, Teraulay Street, University Avenue, Walton Street, Wellington Street, Wolesley Street, York Street, Bean Street, Belair Street, Berryman Street, Bismarck Avenue, Crescent Road, Cumberland Street, Chestnut Park Road, Cluny Avenue, Cottingham Street, Davenport Road, Elgin Avenue, Glen Road, Huntley Street, Marlborough Avenue, Maple Avenue, Molson Street, Nanton Avenue, Park Road, Russell Hill Road, South Drive, Scarth Road, Webster Avenue, Yonge Street, Bathurst Street, Dupont Street, Exhibition Road, Givens Street, Ossington Avenue, Palmerston Avenue, Stafford Street, Strachan Avenue, Coolmine Road, Dufferin Street, Sheridan Avenue,

Brock Avenue, Sterling Road, Lansdowne Avenue, Osler Avenue, Pelham Avenue, Miller Avenue, Cooper Avenue, Atlantic Avenue, Collahie Street, Earnbridge Street, Hickson Street, Lake Shore Road, Mackenzie Crescent, Noble Street, Tyndall Avenue, Annette Street, Bruce Street, Dundas Street, Clendennan Avenue, Heintzman Street, High Park Avenue, Indian Road, Keele Street, Mavety Street, Medland Street, Mulock Avenue, McMurray Avenue, Junction Road, Pacific Avenue, Quebec Avenue, St. Clair Avenue, St. John's Road, Vine Avenue, Western Avenue, Woodville Avenue, Weston Road South.

The total expenditure for such work amounted to $10,850.45.

GENERAL ROADWAY REPAIRS.

The various asphalt, brick, cedar block, stone, gravel and unpaved roads throughout the City have been examined from time to time and repaired when necessary.

GRADING AND TURNPIKING.

One hundred and twenty-three streets have been graded and turnpiked at a cost of $25,558.62.

District No. 1.

Ashdale Avenue, from Queen Street to Gerrard Street	$595 57
Armand Avenue, from south end to north end	718 50
Burgess Avenue, from Woodbine Avenue to east end	449 97
Balmy Avenue, from Silver Birch Avenue to east end	119 57
Balsam Avenue, from Beech Avenue to Willow Avenue	147 77
Dixon Avenue, from Woodbine Avenue to west end	37 05
DuVernet Avenue, from Woodbine to east end	203 95
Elmer Avenue, from Queen Street to north end	165 97
Fernwood Park Avenue, from Hazel to Fir Avenue	27 00
Herbert Avenue, from Queen to north end	247 92
Isleworth Avenue, from Hammersmith Avenue to east end	204 11
Juniper Avenue, from Lee Avenue to Bellefair Avenue	434 49
Kenilworth Avenue, from Kingston Road to Kenilworth Crescent.	547 01
Morley Avenue, from Queen to Applegrove Avenue	50 69
McLean Avenue, from Queen to north end	204 58
Norway Place, from Woodbine to east end	129 00
Pine Avenue, from Beech Avenue to Willow Avenue	133 45
Rainsford Avenue, from Queen to Dixon Avenue	86 53
Sycamore Avenue, from Beech Avenue to Balsam Avenue	71 74
Silver Birch Avenue, from Queen to lake front	286 71

Scarborough Road, from Kingston Road to Lyall Avenue	356 15
Willow Avenue, from Queen to Kingston Road	788 24
Wheeler Avenue, from Queen to First Ravine	136 14
Total	$6,142 11

DISTRICT No. 2.

Arundel Avenue, from Danforth to north City limits	$326 16
Albemarle Avenue, from Logan Avenue to Hampton Avenue	188 56
Boston Avenue, from Gerrard Street south	108 77
Boothroyd Avenue, from Boultbee Avenue to north end	37 95
Chester Avenue, from Danforth to north City limits	60 32
Cambridge Avenue, from Danforth to north City limits	200 19
Dawson Avenue, from Dunedin to east end	12 50
Eaton Avenue, from Danforth to north City limits	186 11
Ellerbeck Avenue, from Danforth to north City limits	222 09
Erindale Avenue, from Don Mills Road to Ellerbeck	51 00
Empire Avenue, from Queen Street to Eastern Avenue	326 16
Hurndale Avenue, from Don Mills Road to Ellerbeck	45 72
Logan Avenue, from Danforth to north City limits	79 14
Moscow Avenue, from Danforth to north City limits	439 48
Myrtle Avenue, from Carlaw Avenue to Leslie Street	70 50
Maplewood Avenue, from Pape Avenue to east end	97 63
Pape Avenue, from Danforth to north City limits	139 50
Playter Boulevard, from Danforth to Playter Crescent	37 25
Playter Crescent, from Ellerbeck to Jackman	284 88
Pretoria Avenue, from Don Mills Road to Ellerbeck	85 80
Poucher Street, from Smith Street to south end	26 75
Strathcona Avenue, from Carlaw Avenue to east end	364 98
Seymour Avenue, from Boultbee Avenue to north end	72 09
Shudell Avenue, from Condor to east end	141 36
Tennis Crescent, from Broadview Avenue to east end	24 74
Wroxeter Avenue, from Carlaw Avenue to Pape Avenue	108 74
Woodycrest Avenue, from Danforth to north City limits	231 91
Total	$3,970 28

NOTE.—No streets graded or turnpiked in District No. 3 or District No. 4.

DISTRICT No. 5.

Albany Avenue, from Dupont Street to Davenport Road	$60 55
Alvin Avenue, from St. Clair Avenue to north end	158 68
Austin Terrace, from Spadina Avenue to Walmer Road	136 42
Davenport Road, from Dupont to Bathurst Street	539 38
Edgewood Crescent, from Summerhill Avenue to north end	236 58

Ferndale Avenue, from St. Clair Avenue to north end	234 52
Glen Road, from Roxborough to Summerhill Avenue	1,571 98
Howland Avenue, from Dupont to Davenport Road	220 95
Heath Street E., from Yonge to east end	47 42
Hilton Street, from Bathurst to Nina	71 78
Lawton Avenue, from Heath Street to north end	1,048 44
Lyndhurst Avenue, from Walmer Road to Melgund Road	49 14
Nina Avenue, from Lyndhurst to Bathurst	559 94
Pricefield Road, from pavement to 256 feet west	127 30
Roxborough Street E., from Highland Avenue to bridge	398 12
Spadina Road, from St. Clair to Austin Terrace	56 09
Standish Avenue, from Summerhill Avenue to east end	205 84
Summerhill Avenue, from Shaftsbury to east end	232 65
St. Clair Avenue E., Yonge to east end	31 54
St. Clair Avenue W., from Yonge to Bathurst Street	566 27
Walmer Road, from Davenport to north end	297 06
Warren Road, from St. Clair Avenue to Lonsdale Avenue	25 11
Wells Hill Road, from Nina to Melgund Road	976 48
Total	$7,852 24

District No. 6.

Ellsworth Avenue, from Vaughan Road to Bracondale	$49 50
Harbord Street, from Clinton to Montrose Avenue	11 43
Hendrick Avenue, from St. Clair Avenue to south end	258 69
Montrose Avenue, from Harbord north to asphalt pavement	21 06
Montrose Avenue, from Harbord south to ravine	91 81
Ossington Avenue, from Davenport Road to St. Clair	726 67
Palmerston Gardens, from Palmerston Avenue to Manning Avenue	28 17
Rushton Road, from St. Clair Avenue to Benson	28 17
Roxton Road, from Arthur north to asphalt pavement	132 08
Total	$1,347 58

District No. 7.

Ashburnham Avenue, from Dickens to Greenlaw Avenue	$18 02
Brandon Avenue, from Lansdowne Avenue to Dufferin	12 14
Bartlett Avenue, from Geary Avenue to Davenport Road	49 98
College Street extension, Lansdowne to St. Helens	72 25
Dovercourt Road, from C. P. R. to Davenport Road	99 33
Davenport Road, from Weston Road to Dovercourt Road	99 76
Dufferin Street, from C. P. R. to north City limits	284 24
Ernest Avenue, from Symington Avenue to Perth Avenue	12 53
Ford Street, from Davenport Road to St. Clair Avenue	11 11
Geary Avenue, from Dufferin to Dovercourt Road	90 12

Hamburg Avenue, from Geary Avenue to Davenport Road	14 82
Janett Avenue, from Lansdowne Avenue to Brown	20 88
Laughton Avenue, from Davenport to St. Clair	75 18
Lansdowne Avenue, from Davenport to St. Clair	18 75
Macklem Avenue, from College to Parr Street	10 06
McRoberts Avenue, from St. Clair Avenue north	29 72
Northcliffe Boulevard, from Davenport Road to Regal	11 18
Osler Avenue, from Davenport Road to St. Clair	22 44
Pauline Avenue, from Bloor Street to north end	30 39
Prescott Avenue, from St. Clair Avenue north	42 67
Salem Avenue, from Geary Avenue to Davenport	35 82
St. Clarens Avenue, from Davenport to St. Clair Avenue	110 18
Sylvan Avenue, from Dufferin to Havelock	57 37
St. Anne's Road	19 26
St. Clair Avenue, from Weston Road to east end	671 89
Westmoreland Avenue, Geary Avenue to Davenport Road	42 99
Total	$1,963 08

DISTRICT No. 8.

Algonquin Avenue, from Indian Road to Keele Street	$465 05
Garden Avenue, from Indian Road to Glendale Avenue	233 91
Total	$698 96

DISTRICT No. 9.

Brighton Place and Indian Road intersection	$15 81
Bloor Street, from Keele Street to Oakmount Road	279 09
Beresford Avenue, from Colbeck Avenue north	46 28
Conduit Street, from Oakmount to Pacific Avenue	186 45
Cobalt Avenue, from Ryding Avenue to St. Clair Avenue	55 75
Fisken Avenue, from Annette to Maher Avenue	98 58
Gilmour Avenue, from Annette to 200 feet south	66 17
Indian Road Crescent, from Conduit to 200 feet north	30 25
Maher Avenue, from Fisken to Runnymede Road	20 87
Oakmount Road, from Conduit to 300 feet north	462 35
Quebec Avenue and Glendonwynne Road intersection	1,761 60
Runnymede Road, from St. Clair Avenue to north City limits	165 62
Woodville Avenue and Bloor Street intersection	395 55
Total	$3,584 37

Number of streets graded and turnpiked, 123.
Total cost of work, $25,558.62.

On several of the above streets where the expenditure appears to be considerable, the work was done in connection with concrete sidewalks, which were being constructed as local improvements. In such cases the cost would be proportioned against the concrete walks necessitating the work, or against a recommendation for a grading as a local improvement.

NEW STREETS OPENED AND EXTENDED.

The following is a list of the streets which have been opened and extended as local improvements during the year 1911:

Pinehurst Avenue, from Wheeler to Lee.
Vaughan Road, from Bathurst to St. Clair.
Salisbury Avenue, from Metcalfe to 143 feet east.
Lane north of Gerrard, from Curzon to Jones.
Kenneth Avenue, from present west terminus to Indian Road.

The sum of $6,573.89 has been received in the Roadway Office and paid to the City Treasurer. This amount is subdivided as follows:

Sidewalk extensions, private crossings, etc	$1,646 94
Street openings, 33 permits granted a deposit, totalling	1,336 00
Miscellaneous accounts	167 50
Amounts received from sale of material	3,600 70
	$6,751 14
Refunds	177 25
	$6,573 89

The following permits have been issued during the year, under the direct supervision of the Area and Sign Inspector:

Awnings	643
Areas	71
Gasoline tanks	41
Platforms	2
Steps	1
Compressed air box	1
Show cases	5
Railway track	1
Opening in sidewalk	1
Wooden transit	1
Signs	605
Marquise	13

Electric signs	59
Conduits	3
Fountains	1
Coal chute	1
Use of sidewalk	1
Carriage call	1
Tunnels	2
Fire escape	1

The following miscellaneous items have also been attended to:

Areas repaired	164
Encroachments removed	93
Hoardings cleaned up and altered	137
Gasoline tanks inspected	56
Signs notified to repair	32
Coal chutes notified to repair	25
Eavetroughing notified to repair	8
Awnings notified to repair	3
Canopy notified to repair	1
Fire escape notified to repair	1

The revenue derived from area rentals for the year 1911 was $10,638.63.

The revenue derived from illuminated signs for the year 1911 was $2,118.28.

The total number of illuminated signs in the City is 525.

STREET NUMBERING AND NAMING.

The activity in building operations has continued during the year, and the large number of buildings erected and in course of erection has resulted in the opening up of new streets, necessitating numbering and the erection of street tablets. In addition to the numbering of new thoroughfares, old ones have had to be renumbered.

The following streets have been renumbered and named:

Munro Park Avenue; Kingston Road; Coxwell Avenue; Kingswood Road; Erie Terrace; Fernwood Park Avenue; Heyworth Crescent; Golfview Avenue; Devon Road; Norway Place; Minto Street; Colina Street; Redwood Avenue, from Gerrard to G. T. R.; Isleworth Avenue; Williamson Road; Cambridge Avenue; Booth Crescent; Woodstock Avenue; Agnes Street, both sides, from Yonge Street to University Avenue;

Classic Avenue: Angus Place; Roxton Road, both sides, from Arthur to College Street; Delaware Avenue, both sides, from College Street to Davenport Road; Bathurst Street, east side, from Wells to No. 1043; Essex Street, south side, from No. 75½ to Shaw Street; Perth Avenue, both sides, from south end to C. P. R.; St. Clair Avenue, east side, from Wallace Avenue to Lappin Avenue; Lansdowne Avenue, west side, from Subway to Whytock; Lansdowne Avenue, west side, from 776 to Lappin Avenue; Shanley Street, south side, from Dovercourt Road to Salem Avenue; Edith Street, south side, from Perth to Franklin Avenue; Dufferin Street, east side, from No. 1081 to No. 1143; Salem Avenue, east side, Hallam Street to Van Horne Street; Edwin Avenue, east side, from Ruskin to C. P. R.; Hugo Street, north side, from Perth Avenue to west end; Emerson Avenue, both sides, from Bloor Street to Royce Avenue.

HOUSE NUMBERS AND TABLETS.

The total number of tablets used for street naming is 333.

The total number of numbers used for house numbering is 18,050.

TRACK ALLOWANCE REPAIRS.

The following is a statement of the existing track allowance pavements on which repairs were made during the year.

TABLE No. 14.

General T. A. Repairs.

Arthur Street	$29 58
Avenue Road	80 54
Bathurst Street	2,259 16
Bloor Street	2,925 64
Broadview Avenue	4,825 50
College Street	1,087 70
Church Street	92 25
Dundas Street	19,701 64
Dovercourt Road	68 07
Dupont Street	26 34
Front Street	4,221 61
Gerrard Street	1,055 02
Glen Road	8 61
Howard Park Avenue	89 18
Keele Street	447 94
King Street	21,341 00

McCaul Street	26 72
Ossington Avenue	112 63
Parliament Street	1,757 22
Queen Street West	7,853 07
Queen Street East	15,085 08
Roncesvalles Avenue	5 49
Richmond Street	380 27
Rosedale Loop	16 35
Station Street	36 49
Sherbourne Street	74 45
South Drive	7 20
Winchester Street	198 02
Yonge Street	9,839 26
Yorkville Avenue	10 74
York Street	918 94
	$94,581 51

ASPHALT REPAIRS.

The total yardage of asphalt repairs laid during 1911 was 41,159.42 square yards, and the cost of same was $0.444 per square yard. This extremely low cost is due entirely to the fact that on an expenditure of $3,003.29 for foundation and $32,073.09 for surface, credits on pay cuts to the amount of $21,597.30 were received.

The actual cost per square yard, leaving out all consideration of these credits, was $0.77.

The total production of asphalt and binder, including that used for repairs and the average cost of same per batch, is as follows:

ASPHALT PRODUCTION SURFACE AND BINDER, 1911.

	Number of Batches.	Pay Roll per Batch.	Aggregate per Batch.	Burden per Batch.	Total Cost per Batch.
Surface	12,937	.133	2.158	.388	2.546
Binder.	10,557	.083	1.28	.485	1.765

PLANK WALKS.

The following plank walks were constructed by day labor during the year as local improvements:

Erie Terrace, e.s., Queen to Gerrard.
Knox Avenue, w.s., Eastern Avenue to 151 ft. south.
Geary Avenue, n.s., Dufferin Street to w.s. house No. 286.
Harriett Street, n.s., Leslie Street to 514 ft. east.
Salem Avenue, e.s., a point 918 ft. n. of Geary to Davenport Road.

The total length of plank walk in the City is as follows:

District No.	Length
1	9 miles.
2	3 " 2,502 ft.
3	3 " 3,537 ft.
4	5,059 ft.
5	6 " 3,370 ft.
6	11 " 238 ft.
7	9 " 1,760 ft.
8	4 " 921 ft.
9	5 " 4,590 ft.
Total	54 miles, 857 ft.

CROSSINGS.

There were 160 wooden crossings and 51 permanent crossings constructed, as compared with 77 wooden and 53 permanent constructed during 1910.

HOUSE OF INDUSTRY STONE.

During the season 1910 and 1911, there were 895 cubic yards of stone broken at this yard by the casual inmates, compared with 404 cubic yards broken during the previous season.

ISLAND WALKS.

One new concrete walk was constructed on Lake Front, Centre Island, from Manitou Avenue to Clandeboye Avenue. Also one concrete walk on Island Roadway, from Chippewa Avenue to Ward's Island.

SNOW CLEANING—SIDEWALKS.

During the winter of 1910-1911, the snow was cleared from 2,657,806 lineal feet of sidewalk, compared with 2,835,241 lineal feet in the previous season.

The expenditure amounted to $11,180.61, giving an assessment rate of 4 4-10 mills per foot cleaned against the properties benefited. The rate for 1909-1910 was also 4 4-10 mills. The amount cleaned in 1910-1911 is less by 33.6 miles than that of the previous winter.

Respectfully submitted.

M. A. STEWART,
Assistant Engineer, Roadway Division.

TABLE No. 5.

Asphalt Pavements—1911-12.

Street.	From.	To.	Width in ft.	Length in ft.
Armstrong	1,270 ft. 6 in. w. of Dufferin.	Emerson	24	128
Antler	Perth (except the intersections of Symington and Campbell.)	The east end	24	826
Avoca	St. Clair	Pleasant Blvd.	24	341
Bulwer	Soho	Spadina	17ft. 6in.	699
Bathurst	Niagara	King	25ft. 6in.	688
Barrett	159 ft. s. of Chelsea.	Edna	24	133
Bowden	Danforth	Hogarth	24	1,123
Beatrice	922 ft. n. of College.	141 ft. 7 in. fur. n.	21	143
College	Manning	W. s. Dovercourt	25ft. 6in.	3,768
Carlaw	S. s. Frizzell	Danforth	24	1,752
Dingwall	Pape	630 ft. east	24	648
Dublin	St. Helen's	The west end	21	277
Delaware	Geary	Davenport Rd.	24	1,263
Edwin	Ruskin (except the intersections of Royce.)	North end	21	1,828
Edgewood Cres.	Summerhill	North end	24	412
Euclid	Queen	N. s. l. Robinson	24	615
Empire	Queen	Eastern	24	946
Fenwick	Danforth	640 ft. south	24	640
Foster Place	Elizabeth	East end	21	170
Frizzell	Carlaw	Pape	24	584
Follis	Clinton	Christie	21	271
Gormley	Lawton	West end	24	1,192
Galt	Gerrard	Dagmar	24	889
Geoffrey	Indian Rd.	Keele	24	662
§Geary	Ossington	Dufferin	24	913
Hastings	Queen	Doel	24	1,263
Harbord	Montrose	Ossington	24	1,305
Howard Park Ave.	E.s. Indian	West end	23ft. 6in.	1,145
Hampton	Danforth	S.s. Hogarth	24	1,177
Henderson	Manning	Clinton	20	288
Hook	Woodville	Bruce	24	673
Hurndale	Ellerbeck	Jackman	24	795
Kippendavie	Queen	South end	24	1,468
*Laburnam	Jameson	Dowling	24	766
London	Bathurst (except the intersections of Markham and Palmerston, Euclid).	Manning	24	1,080
§Lawton	Yonge	North end	24	591

TABLE No. 5.

Asphalt Pavements—1911-12.

Pavement Sq. yds.	Concrete Curbing.		Completed.	Contractors.
	Width in ins.	Length in ft.		
347	.....	.....	July 5, 1911	Godson Contracting Co.
2,194	.....	.....	Oct. 26, 1911	" "
731	....	.. ..	Dec. 4, 1911	" "
1,382	6	1,409	June 13, 1911	Constructing and Paving Co.
2,402	6	22	Sept. 1, 1911	Barber Asphalt Paving Co.
355	....	.....	Nov. 14, 1911	Day labor.
3,160	.....	.....	Dec. 6, 1911	Barber Asphalt Paving Co.
332	.....	.....	Oct. 16, 1911	Day labor.
12,527	6	6,721	Sept 4, 1911	Constructing and Paving Co.
4,965	.....	....	Nov. 13, 1911	Barber Asphalt Paving Co.
1,774	.....	.....	June 8, 1911	" "
645	.....	.... ..	Sept. 27, 1911	Constructing and Paving Co.
3,373	....	.....	Oct. 9, 1911	" "
4,156	.....	.....	Oct. 23, 1911	" "
1,138	.....	....	Nov. 28, 1911	Godson Contracting Co.
1,745	6	554	June 10, 1911	Constructing and Paving Co.
2,527	.....	....	Nov. 24, 1911	Barber Asphalt Paving Co.
1,706	6	1,280	July 22, 1911	" "
397	6	46	Oct. 4, 1911	Day labor.
1,544	.....	.....	Aug. 2, 1911	Barber Asphalt Paving Co.
581	.....	.....	Sept. 23, 1911	Constructing and Paving Co.
3,176	....	.....	July 4, 1911	Godson Contracting Co.
2,373	.....	.....	July 21, 1911	Barber Asphalt Paving Co.
1,777	.....	.....	Oct. 26, 1911	Constructing and Paving Co.
2,357	6	1,807	Carried over to 1912	" "
3,366	....	... . ..	July 13, 1911	Barber Asphalt Paving Co.
4,192	6	112	Aug. 9, 1911	Godson Contracting Co.
3,591	6	62	Aug. 19, 1911	Constructing and Paving Co.
3,455	6	57	July 31, 1911	Barber Asphalt Paving Co.
641	.....	.....	Sept. 26, 1911	Constructing and Paving Co.
1,814	....	.....	Oct. 24, 1911	" "
2,257	... .	..... .	Nov. 20, 1911	Barber Asphalt Paving Co.
3,991	6	143	Dec. 13, 1911	" "
1,992	6	1,530	May 13, 1911	Constructing and Paving Co.
2,882	....	.....	May 20, 1911	" "
1,377	6	994	Carried over to 1912.	Godson Contracting Co.

TABLE No. 5.—*Continued.*

ASPHALT PAVEMENTS—1911-12.

Street.	From.	To.	Width in ft.	Length in ft.
Lyndhurst	Walmer	North end	24	1,501
Mutual	N.s. Gould	Wilton	24	641
Marion	21 ft. e. of w.s.l. Sorauren.	A point 649 ft. west	20	649
Montrose	250 ft. s. of Harbord (except intersection of Harbord).	254 ft. 10 in. n. of Harbord.	24	509
Moutray	Dufferin	Sheridan	24	497
Nina	Bathurst	Lyndhurst	24	1,067
Palmerston Gdns	Palmerston	Manning	24	634
Pleasant Blvd.	Pleasant	Avoca	24	702
Playter Blvd.	Danforth	Playter Cres.	24	382
Rebecca	Givens	Dundas	18	323
Rideau	Macdonell	148 ft. east	24	149
Ritchie	Dundas	North end	24	563
Rusholme	Dundas	N.s. St. Anne's Rd.	24	689
St. David	Sumach	Sackville	24	641
St. Clair	Yonge	100 ft. east	42	100
St. Clair	100 ft. e. of Yonge	East end	24	1,001
Sydenham	Parliament	Sumach	24	1,468
Salisbury	192 ft. 8 in. w. of Sackville.	Metcalfe	15—18	190
St. David	Sackville	Parliament	24	763
Strathcona	Carlaw	Pape	24	611
Sackville	Queen	Wilton	24	1,320
Sackville	Wilton (except the intersection of Oak).	Gerrard	24	823
Somerset	Geary	Davenport	24	1,232
Sunnyside	N. s. l. Wright	Garden.	24	663
Summerhill	W. lim. lot No. 1	E. lim. lot No. 28	24	262
Sultan	St. Thomas	144 ft. east	24	171
†Selby	Huntley	Sherbourne	18	595
*Shaw	S.s. Essex	C. P. R. tracks	24	294
Temperance	12 ft. e. of w.s. Bay	10 ft. w. of e.s. Sheppard	22	334
Tecumseth	King (except the intersection of Niagara).	257 ft. s. of Niagara	24	933
*Wallace	Perth easterly (except intersection of Symington).	Railway tracks	24	887
Waverley Rd	Queen	South end	24	1,438
Wilton	River	W. approach of Wilton Bridge.	24	510
⊥ Wilton	Sherbourne	Parliament	24	1,320

TABLE No. 5—*Continued.*

ASPHALT PAVEMENTS—1911-12.

Pavement Sq. yds.	Concrete Curbing.		Completed.	Contractors.
	Width in ins.	Length in ft.		
4,069	6	2,943	Oct. 13, 1911	Barber Asphalt Paving Co.
1,787	6	1,291	June 10, 1911	" "
1,483	.....	.....	Aug. 31, 1911	Godson Contracting Co.
1,369	.....	.....	Dec. 9, 1911	Constructing and Paving Co.
1,325	....	.....	Dec. 9, 1911	Godson Contracting Co.
3,099	....	.....	Dec. 6, 1911	Constructing and Paving Co.
1,753	.....	....	Sept. 25, 1911	" "
1,980	....	.....	Dec. 7, 1911	Godson Contracting Co.
1,134	.....	.....	Nov. 30, 1911	Barber Asphalt Paving Co.
650	6	323	Aug. 31, 1911	" "
397	....	.....	Sept. 28, 1911	Constructing and Paving Co.
1,566	6	20	Nov. 20, 1911	" "
1,945	6	1,400	Sept. 14, 1911	" "
1,708	6	1,281	June 12, 1911	Barber Asphalt Paving Co.
463	6	202	July 14, 1911	Godson Contracting Co.
2,843	6	2,018	July 13, 1911	" "
4,117	....	.....	Sept. 15, 1911	" "
342	.....	.....	Oct. 26, 1911	" "
2,149	.....	.....	Oct. 5, 1911	Barber Asphalt Paving Co.
1,671	.....	.....	Nov. 8, 1911	" "
3,685	.....	.....	Oct. 24, 1911	Day labor.
2,236	....	.. ..	Oct. 20, 1911	"
3,286	.....	.....	Nov. 23, 1911	Godson Contracting Co.
1,932	....	.....	Nov. 16, 1911	Constructing and Paving Co.
802	.....	.....	Nov. 30, 1911	Godson Contracting Co.
465	6	50	Nov. 24, 1911	" "
1,212	.....	....	Dec. 1, 1911	Constructing and Paving Co.
795	6	242	Sep. 1, 1911	Godson Contracting Co.
834	.....	.....	Oct. 28, 1911	" "
2,664	.....	.....	Nov. 30, 1911	Barber Asphalt Paving Co.
2,409	.....	.....	June 28, 1911	Godson Contracting Co.
3,839	6	72	Sep. 9, 1911	Barber Asphalt Paving Co.
1,476	6	1,020	Aug. 27, 1911	Day Labor.
4,123	6	.....	Sep. 28, 1911	Godson Contracting Co.

TABLE No. 5.—*Continued.*

ASPHALT PAVEMENTS—1911-12.

Street.	From.	To.	Width in ft.	Length in ft.
Wroxeter	Pape	Carlaw	24	607
Yarmouth Gardens	21 ft. e. of w. s. l. Palmerston.	18 ft. e. of w. s. l. Manning.	24	634
		10.713	miles =	56,565

⊥ Laid in connection with new Street Railway track allowance, old stone curbing reset.
† Asphalt surface, laid on existing brick pavement.
* Carried over from 1910.
§ Carried over to 1912.

BITULITHIC.

Bellwoods	Arthur	Mansfield	24	881
Chelsea	Dundas	Sinclair w.s.l.	24	293
College	Indian Rd.	Keele	24	724
Chelsea	Sinclair	Barrett	24	224
Carlaw	Danforth	N. city limit	24	1,381
Duggan	Lawton	The west end	24	1,149
¶Dovercourt Rd.	College	Bloor	23 ft 6 in.	2,806
Drumsnab Rd.	Castle Frank	188 ft. east	36	643
and from s. end to	n. end of section ru	nning n. and s.		
Dovercourt Rd.	S. s. Churchill	College	24	827
Edna St. and Ave.	Dundas	709 ft. west	24	713
Foxley	Dundas	Dovercourt Rd.	24	935
†Huron	Bernard	Dupont	24	951
Heath	Avenue Rd.	West City limit	24	1,629
Howland	C. P. R.	Davenport Rd.	24	916
*Indian Rd.	High Park Blvd.	Constance	24	899
Indian Rd	S.s.l. Boustead	Bloor	24	1,015
¶¶Indian Rd.	Garden	Wright	24	1,057
*Indian Grove	220 feet s. of Ridout	N. lim. house No. 76	24	663
§Logan	Bain	Danforth	24	785
†Montrose	Arthur	College	24	1,808
*Pears	Avenue Rd.	632 feet west	24	641
*Pears	Bedford Rd.	A pt. 119 ft. 2 in. e.	21	119
Pricefield Rd.	Cluny	256 ft. west	21	255
Russell Hill Rd.	S. s. Heath	N. City lim.	24	767
St. Andrew's Gardens N. and s. branches	Macleman	Glen Rd	24	2,636
Summerhill Gardens.	Summerhill	Summerhill	24	997
Sylvan	Havelock	Dufferin	24	767

TABLE No. 5.—*Continued.*

ASPHALT PAVEMENTS—1911-12.

Pavement sq. yds.	Concrete Curbing.		Completed.	Contractor.
	Width. in ins.	Length in ft.		
1,667	....	.....	Nov. 3, 1911	Barber Asphalt Paving Co.
1,759	.....	.....	Oct. 17, 1911	" "
156,256		25,599	=4.848 miles	

BITULITHIC.

2,454	6	1,772	July 3, 1911	Warren Bituminous Paving Co.
849	... .	.....	May 27, 1911	" "
1,929	.....	.....	July 7, 1911	" "
599	.....	....	Oct. 18, 1911	" "
3,807	.....	.....	Dec. 5, 1911	" "
3,064	.....	....	June16, 1911	" "
8,289	6	5,367	Oct. 14, 1911	Day Labor.
2,826	.....	.....	Sep. 22, 1911	Warren Bituminous Paving Co.
2,376	.....	.... .	Sep. 18, 1911	" "
2,028	6	160	May 25, 1911	" "
2,494	....	.....	Sep. 7, 1911	" "
2,536	. ...	....	Sept. 4, 1911	" "
4,350	6	27	Sept. 29, 1911	" "
2,572	6	192	Oct. 22, 1911	" "
2,640	....	.. ...	Car. over 1912	" "
3,026	6	2,070	Aug. 16, 1911	Day labor.
2,870	... .	.....	Dec. 9, 1911	Warren Bituminous Paving Co.
1,734	6	87	May 31, 1911	" "
2,204	....	.....	Car. over 1912	" "
4,972	....	.....	Aug. 2, 1911	" "
1,708	6	107	June 10, 1911	" "
284	6	245	June 10, 1911	" "
601	.....	.....	June 18, 1911	" "
2,202	6	1,579	June 26, 1911	" "
7,237	.....	.....	Aug. 29, 1911	" "
2,659	6	2,000	Oct. 4, 1911	Day labor.
2,171	.....	.....	Nov. 18, 1911	Warren Bituminous Paving Co.

TABLE No. 5.—*Continued.*

BITULITHIC.

Street.	From	To	Width in feet.	Length in feet.
Warren Rd.....	St. Clair	N. City limit	24	1,476
Walmer Rd.....	St. Clair	"	24	Graded.
		5·294	miles=	27,957

† Bitulithic, on existing foundation.

* Carried over from 1910.

§ Carried over to 1912.

¶ On 6-in. concrete foundation.

¶¶ On 5-in. concrete foundation.

ASPHALT BLOCK.

*College.....	Dovercourt Rd.....	Lansdowne.....	25½	3,687
*Grace..... ...	2,250 ft. n. of n.-e. corner of College.	A pt. 645 ft. s. of Bloor.	24	262
*Grace.....	1,904 ft. n. of n.-e. corner of College.	346 ft. fur. north...	24	346
§§Lane 1st s. of Queen	Simcoe.....	Duncan	18	508
*Macdonnell Square..	Bathurst.	Bathurst.....	24-40	981
Spadina Rd.....	S.s. Bridge.....	S.s. Austin Terrace.	24	1,225
Spadina Rd....	St. Clair, s.....	Bridge.....	24	1,617
*Woodville.....	Dundas St.....	Annette.....	24	623
		1·751	miles=	9,249

* Carried over from 1910.

§§ Asphalt blocks 2½ in. in depth.

TABLE No. 5.—*Continued.*

BITULITHIC.

Pavement in Sq. Yds.	Concrete Curbing.		Completed.	Contractor.
	Width in inches.	Length in ft.		
4,099	6	2,998	July 31, 1911	Warren Bituminous Paving Co.
.....	6	.. ..	Car over 1912	" "
73,917		16,604	=3·144 miles	

ASPHALT BLOCK.

11,753	6	7,328	July 13, 1911	R. Bangham.
670	6	262	May 26, 1911	Constructing and Paving Co.
928	6	346	May 26, 1911	" "
1,016	6	1,023	Sept. 28, 1911	Day labor.
3,021	..	.....	June 27, 1911	John Maguire.
3,361	6	2,473	Nov. 4, 1911	"
1,777	..	.....	Oct. 5 1911	"
1,649	6	619	July 19, 1911	"
24,175		12,051	=2·282 miles	

TABLE No. 5.—*Continued.*

BRICK BLOCK.

Street.	From.	To.	Width in ft.	Length in ft.
Cherry	Front (except 32 ft. at	G. T. R. tracks C. P. R. tracks.)	28	687
Carlaw	Gerrard	N. s. Riverdale	42	1,191
*Duncan	Queen (except the intersec	Adelaide tion of Richmond.)	30	585
Dundas	Between bridges		30ft.6in.	338
§Front	N. s. Trinity (except 45 ft. at	325ft.e.ofe.s.Cypress railway tracks.)	36	1,034
Grandview	Hampton	146 ft. east	21	142
*Lane between Queen and Richmond.	Church, 20 ft. w. of e. s. l.	Berti, 18 ft. e. of w. s. l.	16ft.6in.	202
*Lane 1st n. of Ashbridge's Bay.	Logan	Morse	12	293
Lovatt Place	Sumach	East end	18	294
Paton Rd.	Symington	G. T. R. tracks	24	625
*Trinity	N. s. Mill	G. T. R. tracks	38	444
§Trinity	King	Mill	24	414
		1.183	miles=	6,249

*Carried over from 1910.

§Carried over to 1912.

GRANITE BLOCK.

*Lane 1st e. of Church	Front	Esplanade	16—20	358

*Carried over from 1910.

CONCRETE.

Gilead Place	21 ft. s. of n. s. l. Eastern.	King	10 ft. to 13ft.5in.	399
*Lane 1st n. of Francis	Adelaide	Commercial Lane	10	180
*Lane 1st n. of College	17 ft. east of w. s. Robert.	A point 116½ ft. west, thence north 189 ft., thence west to Major.	9	413
*Lane 1st s. of Gerrard	Berkeley	Parliament	14	324
*Lane 1st e. of Yonge	Adelaide	106 ft. south	10ft.6in. to 18 ft.	106
*Lane 1st e. of Yonge	21 ft. south of n. s. of Gloucester	21 ft. north of s. s. of Isabella.	15	349

TABLE No. 5.—*Continued.*

BRICK BLOCK.

Pavement Sq. yds.	Concrete Curbing.		Completed.	Contractor.
	Width in ins.	Length in ft.		
2,276	6	1,369	Aug. 12, 1911	Constructing and Paving Co.
5,684	6	2,473	Nov. 22, 1911	Godson Contracting Co.
1,976	6	1,217	May 23, 1911	John Maguire.
1,234	... .	765	Aug. 31, 1911	Day labor.
3,888	6	1,514	Carried over to 1912	"
332	.....	.....	July 5, 1911	"
386	6	287	July 21, 1911	Page & Britnell.
395	6	533	May 23, 1911	Day labor.
588	.....	.....	Sept. 23, 1911	"
1,792	6	1,266	Oct. 25, 1911	Grant Contracting Co.
2,117	6	97	June 20, 1911	" "
1,133	6	43	Car. over 1912	Day labor.
27,801		9,564	=1.811 miles	

GRANITE BLOCK.

661		30	May 5, 1911	John Maguire.

CONCRETE.

536	6	800	Sept. 28, 1911	Day labor.
200	.....	.....	May 26, 1911	"
417	6	43	July 27, 1911	"
506	6	625	May 27, 1911	"
132	.....	.....	Sept. 8, 1911	"
582	6	40	Aug. 31, 1911	"

TABLE No. 5.—*Continued.*

CONCRETE.

Street.	From	To	Width in ft.	Length in ft.
*Lane 1st s. of Sullivan.	Lane 1st w. of Beverley.	160 ft. 5 in. fur. west	10	161
Lane 1st s. of Dundas	Mavety	Medland	19	302
Lane 1st w. of Church	Lombard	77 ft. 6 in. south, thence west 298 ft.	9 ft. 10 in. to 11 ft. 6 in.	312
Lane 1st e. of Spadina	Cecil	A point 196 ft. south	20	196
Lane 1st w. of Yonge	Yorkville	South, then west, then n. to Yorkville	9—13	692
Lane 1st w. of Dovercourt.	12 ft. s. of n. s. l. of College.	160 ft. 5 in. north	13	165
Lane 1st w. of Spadina	12 ft. s. of n. s. l. of Harbord.	144 ft. 10 in. north.	7	144
Lane 1st w. of Yonge	15 ft. s. of n. s. l. of Grenville.	19 ft. n. of s. s. l. Grosvenor.	18	296
Lane e. of Ferry shed	Lake	136 ft. south.	17 ft. 7 in.	136
Pullan Place	William	West end.	14	121
Vivian	Gerrard	100 ft south.	9 ft. 9 in.	102
Vivian	100 ft. s. of Gerrard	South end.	16	106
		.853	miles =	4,504

*Carried over from 1910.

MACADAM.

Russell Hill Rd.	Poplar Plains Rd.	Clarendon	24	1,400
§Sparkhall	380 ft. e. Broadview	Hampton	22	634
		.385	miles =	2,034

§ Carried over to 1912.

TABLE No. 5.—*Continued.*

CONCRETE.

Pavement Sq. yds.	Concrete Curbing.		Completed.	Contractors.
	Width in inches.	Length in ft.		
243	.....	.....	June 8, 1911	Day labor.
641	6	604	Aug. 12, 1911	Grant Contracting Co.
346	6	588	Sept. 18, 1911	Day labor.
433	.....	.....	Aug. 1, 1911	A. Gardner & Co.
895	6	1,351	Sept. 6, 1911	Day labor.
198	6	284	Sept. 21, 1911	"
113	6	272	Nov. 25, 1911	"
548	6	5	Nov. 12, 1911	Grant Contracting Co.
269	.....	.....	.....	Day labor, order of Council.
202	6	...	Aug. 28, 1911	Day labor.
100	6	204	July 29, 1911	A. J. Penberthy.
197	6	202	July 26, 1911	" "
6,558		5,018	=.950 miles	

MACADAM.

3,832	6	2,712	July 31, 1911	Constructing and Paving Co.
1,796	.....	.....	Car. over 1912	Day labor.
5,628		2,712	=.513 miles.	

TABLE No. 5.—*Continued.*

GRADING.

Street.	From	To	Width in ft.	Length in ft.
Armand	North end	South end	40	696
Bain	500 ft. e. Broadview	700 ft. fur. east	40	700
Birch	Queen	Kingston Rd.	40	2,714
Connaught	Queen	Eastern	40	579
Drumsnab Rd.	Castle Frank	188 ft. east	48.	616
	And from n. end to running n. and s.	s. end of section		
§Douglas Drive	Glen Rd.	East end	40	1,060
Garden	Indian Rd.	Keele	40	197
Hain	Bloor	1,000 ft. north	40	1,000
Indian Rd.	Garden	Algonquin	40	719
†Jane	Bloor	Annette.	20-22½	3,378
Juniper	Bellefair	Lee	38	533
Keele	S. s. Garden	Wright	40	1,034
Keele	Bloor	Conduit	40	1,298
Kenneth	Dundas	West end	40	566
Lansdowne	Davenport Rd.	St. Clair	40	1,837
Oakmount	Bloor	Conduit	40	1,345
Pendrith	Shaw	A point 200 ft. e.	40	200
Prospect	St. Clair	North City limit	40	2,550
St. Clarens	Davenport Rd.	St. Clair	40	1,777
Scarborough Rd.	Queen	Kingston Rd	34	2,667
*Woodville	Conduit	600 ft. south	40	600
Willow	Queen	595 ft. north of Pine	40	1,972
		5.310	miles =	28,037

†Turnpiking, grading and gravelling.
* Carried over from 1910.
§ Carried over to 1912.

TABLE No. 5.—*Continued.*

GRADING.

Cub. yds. Cut.	Cub. yds. Fill.			Completed.	Contractors.
4,786	3,378	.. ....	.....	Dec. 30, 1911	Day labor.
371	2,436	.....	.....	June 13, 1911	Thos. Self.
5,068	1,281	.....	.....	Oct. 6, 1911	Day labor.
542	2,519	.....	.....	Jan. 17, 1912	A. Johnson.
1,364	21	.....	.....	June 13, 1911	Britnell Contracting Co.
2,885	1,373	.....	.....	Car. over 1912	" "
807	114	.... ..	.....	Aug. 12, 1911	Day labor.
4,839	892	.....	.....	Aug. 12, 1911	"
1,329	1,646	....	.....	Oct. 16, 1911	Britnell Contracting Co.
2,348	5.084	.....	... .	Jan. 3, 1912	Day labor, order of Council
647	1,405	.....	.....	Nov. 9, 1911	" "
2,079	1,650	.....	.....	Nov. 29, 1911	" "
11,536	4,413	.... ..	.....	July 7, 1911	Day labor.
859	534	....	.....	Oct. 3, 1911	Britnell Contracting Co.
4,546	825	. .....	.... ..	Aug. 3, 1911	Day labor.
5,488	148	.....	.. ....	Nov. 16, 1911	Day labor, order of Council
1,655	169	.....	.....	July 3, 1911	Britnell Contracting Co.
3,790	2,203	.....	.....	Nov. 13, 1911	Day labor.
4,432	448	.....	....	April 13, 1911	"
6,819	413	.....	.....	Jan. 16, 1912	A. Johnson.
900	4,454	.....	....	July 19, 1911	Day labor.
2,889	1,157	.....	.....	Sept. 8, 1911	"
69,979	36,563				

TABLE No. 5.—*Continued.*

RECONSTRUCTION OF PAVEMENTS IN CONNECTION WITH NEW TRACK ALLOWANCE.

Street.	From	To	Width in ft.	Length in ft.
†Adelaide, s.s.	Spadina	Bathurst	12	1,991
†Harbord	Spadina	Bathurst	24	2,004
*Ossington	S. s. Harbord	Bloor	24	1,296
†Victoria	Queen	Wilton	24	1,138
†Wilton	Victoria	E. s. l. George	24	1,622
*Wilton Crescent	George	Sherbourne	24	692
†Wilton, n.s.	Parliament	Sumach	12	1,468
†Wilton	W. s. l. Sumach	River	24	646
†Wilton Ave. Bridge			24	384
*Harbord, s.s.	Markham	Palmerston	12	264
†Harbord, s.s.	Bathurst (Except from Palmerston to Markham.)	Clinton	12	1,343
†St. Patrick, n.s.	Beverley	Ryerson	12	2,540
*St. Patrick, n.s.	E. s. l. Ryerson	Bathurst	12	539
		3.06	miles =	15,927

† Asphalt pavement.
* Bitulithic pavement.

NEW TRACK ALLOWANCE.

Street.	From.	To.	Width in ft.	Length in ft.
Adelaide	Church	York	18	2,266
Adelaide	York	Spadina	18	3,065
Bay	Queen	Front	18	2,172
Harbord	Bathurst	Spadina	18	2,004
Ossington	Harbord	Bloor	18	1,278
Queen	River	E. app. viaduct	18	780
Queen	E. app. viaduct	Carroll	18	417
Victoria	Adelaide	Richmond	18	421
Victoria	Queen	Shuter	18	560
Victoria	Shuter	Wilton	18	574
Wilton	Victoria	Sherbourne	18	2,402
Wilton	River	Bridge	18	416
Wilton Ave Bridge			18	384
				16,739

TABLE No. 5.—*Continued.*

RECONSTRUCTION OF PAVEMENTS IN CONNECTION WITH NEW TRACK ALLOWANCE.

Pavement Sq. yds.	Concrete Curbing.		Completed.	Contractors.
	Width in inches.	Length in ft.		
2,785	6	2,031	.....	Day labor.
5,344	6	3,684	.....	"
3,623	6	2,548	.....	"
3,033	6	2,275	.....	"
5,116	6	3,183	.....	"
1,830	6	1,379	.....	"
2,106	6	1,422	.....	"
1,801	6	1,274	.....	"
1,024	6	768	.....	"
354	6	304	.....	"
1,788	6	1,267	.....	"
3,600	6	2,515	.....	"
796	6	521	.....	"
33,200		23,171	=4.388 miles	

NEW TRACK ALLOWANCE.

Pavements in Sq. yds.	Class.	Completed.	Contractor.
4,532	Asp. Blk	.....	Day Labor.
6,131	Scoria Block	.....	" "
2,344	Treated Wooden Blk.	.....	" "
4,008	Brick Block	.....	" "
2,556	Brick Block.....	.....	" "
1,560	Treated Wooden Blk.	.....	" "
834	Macadam.....	.....	" "
842	Granite Block.....	.....	" "
1,120	Treated Wooden Blk.	.....	" "
1,148	Granite Block.....	.....	" "
4,804	Scoria Block.....	.....	" "
762	Brick Block	.....	" "
768	Treated Wood.....	.....	" "
31,331			

TABLE No. 5.—*Continued.*

TRACK ALLOWANCE RECONSTRUCTION.

Street.	From.	To.	Width in ft.	Length in ft.
Bathurst	Arthur	St. Patrick	16ft. 6in. to 18 ft.	628
Broadview	Hogarth	Wolfrey	16ft. 6in.	552
King	Berkeley	St. Lawrence	16ft. 6in.	2,488
Lansdowne	Paton	Wallace	16ft. 6in.	654
Lansdowne	Dundas	College	16ft. 6in.	270
Parliament	Carlton	Winchester	16ft. 6in.	466
Spadina	Queen	Baldwin	18ft. 6in.	2,800
				7,858

NEW INTERSECTIONS.

Intersection of Bay	and Queen		
" "	" Richmond		
" "	" Adelaide		
" "	" King		
" "	" Wellington		
" "	" Front		
" of Bath	urst and Adelaide		
" "	" St. Patrick		
" "	" Harbord		
" "	" Bloor		
" of Chur	ch and Wilton		
" "	" Adelaide		
" of Ossi	ngton and Bloor		
" " Parl	iament and Wilton		
" " Sher	bourne and Wilton		
" " Spad	ina and Adelaide		
" " Spad	ina and St. Patrick		
" " Spad	ina and Harbord		
" " Tera	uley and Queen		
" " Victo	ria and Shuter		
" " Victo	ria and Queen (secti	on only)—n.e. curve	
" " Victo	ria and Richmond		
" " Victo	ria and Adelaide		
" " Yong	e and Adelaide		
" " York	and Adelaide		
" " York	and Richmond (secti	on only)—s.e. curve	

TABLE No. 5.—*Continued.*

TRACK ALLOWANCE RECONSTRUCTION.

Pavements in Sq. yds.	Class.	Completed.	Contractor.
1,203			Day Labor.
1,012			" "
4,562			" "
1,199			" "
495			" "
854			" "
5,756			" "
15,081			

NEW INTERSECTIONS.

457	Granite		Day Labor.
566	Tr. Wd		" "
753	Tr. Wd		" "
387	Granite		" "
636	Tr. Wd		" "
457	Granite		" "
457	Granite		" "
219	Granite		" "
64	Brick		" "
457	Granite		" "
264	Granite		" "
457	Granite		" "
566	Granite		" "
387	Granite		" "
64	Granite		" "
457	Granite		" "
416	Brick		" "
387	Brick		" "
352	Granite		" "
118	Tr. Wd		" "
102	Granite		" "
753	Granite		" "
457	Granite		" "
64	Granite		" "
365	Granite		" "
102	Granite		" "
9,764			

TABLE No. 5.—*Continued.*

INTERSECTIONS RECONSTRUCTED.

Street.	From.	To.	Width in ft.	Length in ft.
Intersection of Lansdowne and Dundas.				
" " King and Dufferin.				
" " Queen and Dundas.				

CONCRETE CURBINGS.

Street.	From.	To.	Side.
Avoca	St. Clair	Pleasant Blvd.	East
Antler	Campbell	East end	South.
Antler	Symington (except intersection	East end of Campbell.)	North
Bowden	Wolfrey	Danforth	West
*Cameron Place	Cameron	Vanauley	North
Clendenman	Dundas	58 ft. north	West
*Cameron	Queen	N.s. Cameron Pl. (pro.)	East
*Cameron	Queen	824 ft. north	West
Conduit	752 ft. w. of Dundas	Western	North
Conduit	752 ft. w. of Dundas	Western	South.
Chelsea	W. s. l. Sinclair (prod.)	Barrett	South
Carlaw	Riverdale	Danforth	West
Carlaw	Dingwall	Danforth	East
Drumsnab Rd.	N. s. Drumsnab Rd. running west.	North end.	West
Dovercourt Rd.	Shannon	College	East
Dovercourt Rd.	St. Anne's Rd.	College.	West
Delaware	Geary	Davenport Rd.	West
Delaware	Geary	Davenport Rd.	East
*Elm	Yonge	University	North
(except intersections of	Centre, Chestnut, Ter	auley and Elizabeth.)	
*Elm	Yonge	University	South.
(except intersections of	Centre, Chestnut, Ter	auley and Elizabeth.)	
Edwin	Royce	North end	West
Edwin	Ruskin	North end.	East
(except from s. s. Royce to s. s. Edith.)			
Edwin	210 ft.s. of Humberside	Ruskin	West
Fuller	669 ft. n. of Queen.	Pearson	East
Fuller	Marion	Pearson	West
§Glendale	S. limit lot No. 28	Garden	West
Hook	Woodville	Weston Rd.	North
Hook	Woodville	Weston Rd.	South

TABLE No. 5.—*Continued.*

INTERSECTIONS RECONSTRUCTED.

Pavements in Sq. yds.	Class.	Completed.	Contractor.
182	Brick.....	.....	Day Labor.
663	Brick.....	.....	" "
387	Brick.....	.....	" "
1,232			

CONCRETE CURBINGS.

Width in inches.	Length in feet.	Completed.	Contractor.
6	336.4	Nov. 18, 1911.....	Godson Contracting Co.
6	298.0	Oct. 7, 1911.....	" "
6	555.2	Oct. 10, 1911.....	" "
6	746.7	Oct. 7, 1911..... ..	Barber Asphalt Paving Co.
6	176.7	April 29, 1911.....	Day labor, order of Council.
6	58.0	....	" "
6	830.5	April 27, 1911..	Day labor.
6	864.9	April 27, 1911..	"
6	705.9	May 11, 1911..	Grant Contracting Co.
6	669.4	May 11, 1911.....	" "
6	218.4	Sept. 5, 1911.....	Warren Bituminous Paving Co.
6	2,717.5	Dec. 4, 1911	Grant Contracting Co.
6	2,033.0	Dec. 4, 1911.....	" "
6	92.6	Aug. 21, 1911.....	Warren Bituminous Paving Co.
6	281.0	Sept. 18, 1911.....	" "
6	695.0	Sept. 18, 1911.....	" "
6	1,266.0	Sept. 29, 1911.....	Constructing & Paving Co.
6	1,264.0	Sept. 29, 1911.....	" "
6	1,491.0	May 9, 1911.....	Day labor.
6	1,221.0	May 9, 1911.....	"
6	717.0	July 5, 1911.....	Grant Contracting Co.
6	1,432.0	Oct. 10, 1911.....	Constructing & Paving Co.
6	425.4	Oct. 5, 1911..	" "
6	463 5	Sept. 6, 1911.....	Day labor.
6	308.0	Sept. 20, 1911.....	"
6	145.0	Carried over to 1912....	"
6	688.0	May 31, 1911.....	Grant Contracting Co.
6	755.9	May 31, 1911.....	" "

TABLE No. 5.—*Continued.*

CONCRETE CURBINGS.

Street.	From.	To.	Side.
Howard Park Ave.	Indian Rd.	Keele	South ....
High Park Ave.....	Bloor	Dundas	East.....
High Park Ave	Bloor	Dundas	West ...,
Heath	Avenue Rd.	Old west City limit ..	North ....
Heath	Avenue Rd.	Old west City limit ..	South ....
Indian Grove.....	Ridout	North limit No. 76 ..	West ....
Indian Grove	220 ft. s. of Ridout ..	139 ft. 5 in. north....	West ....
Indian Grove....	220 ft. s. of Ridout ..	289 ft. n. of Ridout ..	East.....
Indian Rd.	Garden	Algonquin	West ....
Indian Rd..	Garden	Wright	East.... .
§Keele	Howard Park Ave. ..	Ridout	East.....
London	125 ft. w. of Palmerston	Manning	South ....
London	Bathurst.....	Markham	South ....
London	Bathurst.....	Markham	North ....
Lovatt Place	Sumach	East end.....	South ....
Logan	Danforth	Bain	West ....
§Logan	654½ ft. s. of Danforth	Bain	East.....
*North branch of Macdonnell Square.	Bathurst	E. s. of west branch..	South ....
Montrose	Sully Crescent	College	West ....
*Nina	Bathurst	Lyndhurst	North ....
*Pears.....	Avenue Rd.	632 feet west	South ....
Pricefield Rd.	Cluny	256 feet west	North ....
Pricefield Rd.	Cluny	256 feet west	South ....
Ritchie	534 ft. 6 in. n. of Dundas.	North end	East.. ...
*Shaw.....	S. s. Dupont	North city limit...	East.....
St. Andrew's Gdns.....	West lim. of lot No. 46 easterly, northerly, westerly, southerly, and easterly.	W. limit of lot No. 46	N., W. S. & E.
Salisbury.....	192 ft. 8 in. w. of Sackville.	Metcalfe	North ....
Salisbury.....	293 ft. 6 in. w. of Sackville.	Metcalfe	South ....
Spadina Rd.	St. Clair, southerly...	Bridge.....	East.....
Sackville.....	Wilton.....	St. David	West .....
Somerset.....	Geary.	Davenport Rd.....	East.....
Somerset.	Geary.....	Davenport Rd.....	West . ...
Sylvan.....	135 ft. w. of Havelock	Dufferin	South ....
Sultan	117 ft. e. of St. Thomas	27 ft. e., thence 24 ft. n.	South ....
Sultan	St. Thomas.....	144 ft. east	North ....
Summerhill.....	W. s. l. Glen Rd	329 ft. east	South . .
+Sylvan...	137 ft. w. of Havelock	Dufferin.....	North ....
*Trinity	Mill	163 ft. 4 in. south....	East... ..
*Trinity Sq., e. branch.	S. s. Trinity, thence s. & w.	E. s. lane running s. to Louisa.	East ....,
*Trinity Sq., s. s. of n. br	anch w.s. of e. branch,	n.s. of s. branch, e.s. of	w. branch

TABLE No. 5.—*Continued.*

CONCRETE CURBINGS.

Width in inches.	Length in feet.	Completed.	Contractor.
6	981.6	June 8, 1911	Day labor.
6	4,243.5	Aug. 30, 1911	Grant Contracting Co.
6	4,253.6	Sept. 12, 1911	" "
6	1,435.8	Sept. 2, 1911	Warren Bituminous Paving Co.
6	1,611.8	Sept. 2, 1911	" "
6	324.5	May 20, 1911	" "
6	140.8	May 17, 1911	" "
6	590.4	May 20, 1911	" "
6	763.0	Dec. 2, 1911	" "
6	1,055.4	Dec. 2, 1911	" "
6	560.5	Carried over to 1912	Wm. Bushell.
6	407.5	May 20, 1911	Constructing and Paving Co.
6	267.0	May 20, 1911	" "
6	267.0	May 20, 1911	" "
6	294.0	Sept. 23, 1911	Day labor.
6	2,263.7	Oct. 26, 1911	A. Gardner & Co.
6	185.6	Carried over to 1912	Warren Bituminous Paving Co.
6	330.8	June 24, 1911	John Maguire.
6	208.8	July 19, 1911	Warren Bituminous Paving Co.
6	1,080.5	June 16, 1911	Day labor.
6	542.5	June 1, 1911	Warren Bituminous Paving Co.
6	254.5	June 9, 1911	" "
6	253.1	June 9, 1911	" "
6	27.5	Nov. 20, 1911	Constructing and Paving Co.
6	252.8	Sept. 1, 1911	Godson Contracting Co.
6	2,104.2	Aug. 2, 1911	Warren Bituminous Paving Co.
6	189.6	Oct. 26, 1911	Godson Contracting Co.
6	92.5	Oct. 7, 1911	" "
6	666.5	Oct. 5, 1911	John Maguire.
6	416.7	Oct. 24, 1911	Day labor.
6	1,230.0	Nov. 3, 1911	Godson Contracting Co.
6	1,234.0	Nov. 3, 1911	" "
6	780.6	Oct. 28, 1911	Warren Bituminous Paving Co.
6	63.0	Nov. 15, 1911	Godson Contracting Co.
6	182.0	Nov. 15, 1911	" "
6	263.0	Nov. 30, 1911	" "
6	636.0	Oct. 28, 1911	Warren Bituminous Paving Co.
6	87.7	June 20, 1911	Grant Contracting Co.
6	204.0	April 28, 1911	Constructing and Paving Co.
6	690.7	April 28, 1911	" "

TABLE No. 5.—*Continued.*

CONCRETE CURBINGS.

Street.	From.	To.	Side.
*Trinity Sq., w. & n. branches, s.s. of n. branch northerly, thence e. to 66 ft. e. of w.s. of w. branch.			W. & N.
Trinity	Front	Mill	East
Trinity	Front	Mill	West
Temperance	Bay	Sheppard	North
Tecumseth	Niagara	257 ft. south	East
Tecumseth	Niagara	257 ft. south	West
*Wallace	Perth, east (except the intersection of Symington.)	Railway tracks	South
Waverley Rd	Queen	South end	West
Waverley Rd (except from 620 ft. s. of Queen to 150 ft. further south.)	Queen	South end	East
Wellesley Cr	Jarvis	Sherbourne	North
Wellesley Cr	Jarvis	Sherbourne	South

*Carried over from 1910.
§Carried over to 1912.
+ Walks and curb let to City in 1910, walk not constructed.

CONCRETE SIDEWALKS.

Street.	From.	To	Side.	Width in Feet.
*Alvin	St. Clair	North end	West	5
*Albany	C.P.R. tracks	Davenport Rd.	East	5
*Albany	C.P.R. tracks	Davenport Rd.	West	5
Amelia	Sackville	Sumach	South	5
Armstrong	1,270 ft. 5 in. w. of Dufferin.	Emerson	South	5
Armstrong	1,270 ft. 5 in. w. of Dufferin.	Emerson	North	5
Algonquin	Indian Rd.	Keele	North	5
Avoca	St. Clair	Pleasant Blvd.	West	5
Annette	Clendennan	E. limit lot 1	North	4
Auburn	Dufferin	Greenlaw	North	4
Auburn	Dufferin	West end	South	4

TABLE No. 5.--*Continued.*

CONCRETE CURBINGS.

Width in inches.	Length in feet.	Completed.	Contractor.
6	100.8	April 28, 1911.....	Constructing and Paving Co.
6	433.2	Oct. 24, 1911.....	Grant Contracting Co.
6	431.6	Oct. 24, 1911.....	" "
6	324.5	Oct. 28, 1911	Godson Contracting Co.
6	253.8	Nov. 16, 1911.....	Barber Asphalt Paving Co.
6	252.4	Nov. 16, 1911.... ...	" "
6	883 9	June 17, 1911.....	Godson Contracting Co.
6	1,439.5	Aug. 12, 1911	Barber Asphalt Paving Co.
6	1,439.5	Aug. 12, 1911.....	" "
6	975.1	Oct. 10, 1911.....	Grant Contracting Co.
6	977.0	Sept. 26, 1911.....	" "
	76,131.2	Total - -	- = 14.418 miles.
	67,799.8	By contract -	- = 12.840 miles.
	8,096.7	By day labor -	- = 1.533 miles.
	234.7	By day labor, Order	of Council = .045 miles.

CONCRETE SIDEWALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
530.1	6-in. concrete	530.1	May 2, 1911	Grant Contracting Co.
956.0	"	956.0	May 16, 1911	National Contracting Co.
964.3	"	964.3	May 19, 1911	"
661.2	.....	.....	April 25, 1911	Queen City Con. Co.
143.0	6-in. concrete	129.5	May 5, 1911	Day labor.
142.5	"	128.0	May 3, 1911	Day labor.
566.4	"	566.4	May 20, 1911	Day labor.
264.5	"	272.5	May 17, 1911	Grant Contracting Co.
178.8	....	.....	April 19, 1911	J. J. Thompson.
1,286.2	.....	.....	July 19, 1911	"
1,188.1	.....	....	July 21, 1911	"

TABLE No. 5.—*Continued.*

CONCRETE SIDEWALKS.

Street.	From.	To.	Side.	Width in Feet.
Annette	Evelyn	Runnymede Rd.	North	5
Adelaide	Portland	Bathurst	South	5
Albemarle	Logan	Hampton	North	4
Ashdale	Queen	Gerrard	East	4
Ashdale	Queen	Gerrard	West	4
Alvin	St. Clair	North end	East	5
Antler	Symington	Perth	North	5
Applegrove	Morley	Hiawatha	North	5
Arundel	Danforth	North City limit	East	5
Armstrong	Dufferin	1,270 ft. 5 in. west.	North	5
Armstrong	Dufferin	1,270 ft. 5 in. west.	South	5
Awde	Brock	East end	South	5
Binscarth Rd.	E.s. house No. 26	W.s. house No. 32	North	5
Binscarth Rd.	W.s. house No. 20	133 ft. 10 in. w.	North	5
Binscarth Road and Highland.	133 ft. 10 in. w. of house No. 20.	100 ft. further west	North	5
Beatrice	986 ft. n. of College	84 ft. further north.	West	4
*Boston	Gerrard	South end	East	5
*Boston	Gerrard	South end	West	5
***Bloor	Dundas	Alhambra	South	5
*Balmy	Birch	292 ft. east	South	4
*Boon	St. Clair	Ascot	West	4
*Brighton	Pape	East end	South	4
*Bellefair	1,346 ft. 8 in. north of Queen.	131 ft. fur. north	East	3½
Bartlett	Bloor	Fernbank	East	5
Bartlett	Fernbank	Van Horne	East	5
Bathurst	Old n. City limit	Davenport Rd.	East	6
Booth	Queen	Eastern	West	5
Baker	Baker, running n.	West end.	South	5
Bowden	Hogarth	Wolfrey	West	5
Barrett	159 ft. s. of Chelsea	Edna	East	5
Barrett	159 ft. s. of Chelsea	Edna	West	5
Burgess	Woodbine	East end	South	4
Berkeley	Duke	Duchess	West	5
Boothroyd	Boultbee	North end	West	4
Birch	Queen	South end	East	4½
Bedford Rd	Chicora	Dupont	East	5
Boston	Queen	1,381 ft. north	East	4½
Brighton Place	Indian Rd.	Western	South	4
Brighton Place	Indian Rd. (except 72 ft. 6 in. Nos. 16-22).	Western opposite houses	North	4

TABLE No. 5.—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
1,120.0	6-in. concrete	1,128.0	Aug. 10, 1911	William Bushell.
647.5	.....	.....	July 3, 1911	A. Gardner & Co.
819.3	6-in. concrete	823.0	June 17, 1911	A. Johnson.
2,436.6	"	2,453.0	Sept. 5, 1911	Grant Contracting Co.
2,444.9	"	2,458.0	Aug. 5, 1911	"
529.2	"	529.2	Aug. 18, 1911	Day labor.
299.3	"	258.7	Aug. 31, 1911	William Bushell.
231.4	"	231.4	Nov. 4, 1911	Queen City Con. Pav. Co.
1,396.5	"	1,396.5	Oct. 23, 1911	A. J. Penberthy.
1,290.0	.....	.....	Sept. 30, 1911	William Bushell.
1,290.0	.....	.....	Sept. 15, 1911	"
307.5	6-in. concrete	291.5	Nov. 9, 1911	Day labor.
49.0	.....	.....	June 22, 1911	Day labor, order of Council
131.2	.....	.....	June 15, 1911	"
100.0	.....	.....	June 22, 1911	"
83.7	6-in. concrete	.....	Sept. 11, 1911	"
297.0	"	288.0	May 1, 1911	A. Johnson.
283.6	"	274.1	May 1, 1911	"
315.5	.....	.....	Oct. 16, 1911	Day labor.
294.0	6-in. concrete	294.0	July 24, 1911	A. Johnson.
754.5	"	754.5	Nov. 8, 1911	Day labor.
304.8	.....	.....	Aug. 30, 1911	"
131.0	6-in concrete	131.0	Oct. 5, 1911	" order of Council.
1,870.5	.....	.....	June 19, 1911	J. J. Thompson.
1,234.4	.....	.....	June 19, 1911	"
966.3	6-in. concrete	956.0	Aug. 19, 1911	National Contracting Co.
963.0	.....	.....	June 6, 1911	"
797.3	6-in. concrete	797.3	May 30, 1911	Excelsior Con. & Pav. Co.
358.0	"	354.0	July 27, 1911	A. Gardner & Co.
196.8	"	133.0	Aug. 21, 1911	William Bushell.
188.0	"	134.0	Aug. 21, 1911	"
736.0	"	736.0	July 19, 1911	A. Johnson.
447.0	.....	.....	June 29, 1911	Riverdale Con. Pav. Co.
288.3	6-in. concrete	288.3	Oct. 4, 1911	"
968.1	"	984.8	July 26, 1911	A. Johnson.
211.0	.....	.....	Sept. 28, 1911	J. J. Thompson.
1,396.8	6-in. concrete	1,380.0	Sept. 13, 1911	Excelsior Con. & Pav. Co.
431.8	"	38.0	Oct. 16, 1911	Day labor.
377.4	"	36.0	Oct. 12, 1911	Day labor.

TABLE No. 5.—*Continued.*

CONCRETE SIDEWALKS.

Street.	From.	To.	Side.	Width in Feet.
Bloor	Montrose (except 52 ft. 1 in. Nos. 807-9-811).	Crawford opposite houses.	South	5
Bowden	Wolfrey	Danforth	West	5
Bayside Park	Harbour	Lake	East	.....
Carling	Bloor	Irene Place	East	4½
Chestnut	Edward	1st lane north	West	5
Crawford	1,827 ft. s. of Bloor.	114 ft. 6 in. further s.	West	5
*Conduit	752 ft. w. of Dundas	Western	North	5
*Conduit	752 ft. w. of Dundas	Western	South	5
*Churchill	Dovercourt Rd.	722 ft. east	North	6
*Campbell	St. Clair	854 ft. north	West	4
*Campbell	Royce	C. P. R. tracks	West	5
Chelsea	Dundas	W.s. Sinclair (prod.)	South	5
Chandos	Dufferin	Lightbourne	North	4½
Clinton	Barton	Yarmouth Rd.	West	5
Clinton	Barton	Yarmouth Rd.	East	5
Christie	Bloor	Follis	East	5
Christie	Bloor (except 24.5 ft. opp. house No. 254).	Essex	West	5
Clara	Quebec	300 ft. south	West	5
Christie	Essex	Railway tracks	West	5
Caroline	Queen	Eastern	West	5
Concord	511 feet north of Northumberland.	Hallam	West	5
Clendennan	58 ft. n. of Dundas.	Railway tracks	West	5
Clendennan	Dundas	Railway tracks	East	5
Coady	Queen	North end	East	5
Coady	Queen	North end	West	5
Campbell	Paton Rd.	Wallace	East	5
Campbell	Paton Rd.	Wallace	West	5
Christie	Follis (except 20 ft. 8 in. opp. house No. 291)	Railway tracks	East	5
Chicora	Avenue Rd.	Bedford Rd.	North	5
Campbell	Wallace	Sarnia	East	5
Campbell	Wallace	Antler	West	5
Collahie	Gladstone	Beaconsfield	South	5
Collahie	Gladstone	Beaconsfield	North	5
Cooper	C. P. R. tracks	Davenport Rd.	East	5
Cooper	C. P. R. tracks	109 ft. 9 in. s. of Davenport Rd.	West	5
Cottingham	Avenue Rd.	Rathnelly	North	5
Carus	Ossington	East end	North	5
Carus	Ossington	East end	South	5
Church	Front	Esplanade	Centre.	10

TABLE No. 5.—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
233.7	.....	.....	Nov. 8, 1911	Elnor & Brown.
726.9	.....	.....	Nov. 20, 1911	A. Johnson.
326.2	.....	.....	June 6, 1911	Day labor, order of Council
195.2	.....	.....	Oct. 4, 1911	" "
141.5	.....	.....	July 3, 1911	" "
114.5	6-in. concrete	114.5	Aug. 31, 1911	" "
697.5	.....	.....	May 11, 1911	Grant Contracting Co.
665.3	.....	.....	May 11, 1911	" "
705.5	.....	.....	June 15, 1911	Day labor.
851.8	6-in. concrete	851.8	May 6, 1911	Wm. Bushell.
383 5	"	368.0	May 13, 1911	"
298.3	"	291.3	April 27, 1911	"
511.5	"	511.5	June 28, 1911	"
1,246.3	.....	.....	July 5, 1911	J. J. Thompson.
1,263.7	.....	.....	July 5, 1911	"
1,652.5	.....	.....	July 31, 1911	A. J. Penberthy.
1,633.6	.....	.....	Aug. 10, 1911	"
300.1	6-in. concrete	300.1	July 31, 1911	J. J. Thompson.
1,349.7	.....	.....	Aug. 10, 1911	A. J. Penberthy.
984.4	6-in. concrete	983.0	Sept. 18, 1911	Queen City Con. Pav. Co.
1,336.4	.....	.....	Sept. 8, 1911	A. J. Penberthy.
534.3	6.in. concrete	542.3	July 29, 1911	Grant Contracting Co.
648.9	"	635.5	July 27, 1911	" "
1,006.8	"	1,015.0	Sept. 9, 1911	Queen City Con. Pav. Co.
1,006.8	"	1,015 0	Sept. 9, 1911	" "
603 0	"	585.6	Aug. 18, 1911	Excelsior Con. & Pav. Co.
603.0	"	586.5	Aug. 19, 1911	" "
1,467.0	.....	.....	Aug. 30, 1911	A. J. Penberthy.
782.0	.....	.....	Sept. 27, 1911	J. J. Thompson.
319.0	.....	.....	Sept. 13, 1911	Constructing & Paving Co.
959.0	.....	.....	Sept. 14, 1911	" "
383.0	6-in. concrete	383.0	Sept. 14, 1911	Grant Contracting Co.
383.0	"	383.0	Sept. 12, 1911	" "
1,232.4	"	1,232.4	Oct. 24, 1911	Day labor.
1,192.2	"	1,200.0	Nov. 4, 1911	"
657.3	.....	.....	Sept. 25, 1911	"
300.0	6-in. concrete	300.0	Oct. 31, 1911	Elnor & Brown.
300.0	"	300.0	Oct. 31, 1911	"
334.1	"	714.4	Oct. 25, 1911	A. Johnson.

TABLE No. 5.—*Continued.*

CONCRETE SIDEWALKS.

Street.	From	To	Side.	Width in Feet.
Cassels	Woodbine	East end	South	4
***Duggan	Lawton	West end	South	5
*Dundas	Parkway	Sorauren	South	5
*Dewson	Dovercourt Rd	Havelock	South	5
*Dods	N. s. West Toronto (prod.)	St. Clair	West	4
Dingwall	Pape	Carlaw	North	5
Dingwall	Pape	Carlaw	South	5
Duggan	Lawton	West end	North	5
Davenport Rd	Avenue Rd	Bedford Rd	South	5
Deer Park Cr	St. Clair	Heath	West	5
Drumsnab Rd	Castle Frank	S. lim. lot No. 11	S. & W.	5
Drumsnab Rd	Castle Frank	E. lim. lot No. 3	North	5
Drumsnab Rd	S. lim. lot No. 10	N. lim. lot No. 4	East	5
‖Delaware	Bloor	Hallam	East	5
Duchess	George	Sherbourne	North	6
Dunbar	Dufferin	West end	South	4½
Don Mills Rd	Danforth	N. City limits	West	6
§Davenport Rd	E. lim. lot No. 18 plan D 1319	Shaw	South	5
Dixon	Woodbine	125 ft. w. of Rainsford Rd.	North	5
Dixon	Woodbine	125 ft. w. of Rainsford Rd.	South	5
Dunedin	Shuddell	Baird	West	4½
Duke	Parliament	Berkeley	South	5
Dupont	268 ft. w. of Avenue Rd.	Bedford Rd.	South	5
Don Mills Rd	Danforth	N. City limits	East	6
Dundas	47 ft. 5 in. w. of Clendennan	46 ft. 8 in. e. of Runnymede Rd.	North	6
Douglas Drive	Glen Rd	Summerhill	North	5
Delaware	Hallam	Van Horne	West	5
DuVernet	Woodbine	Armand	South	5
DuVernet	Woodbine	Armand	North	5
Erie	Dundas	South end	East	3
Edwin	Royce	706 ft. north	West	5
Empire	Queen	Eastern	East	5
Empire	Queen	Eastern	West	5
Edgewood Cres	Summerhill	W. lim. lot No. 15	East	5
Edgewood Cres	Summerhill	E. lim. lot No. 14	West	5
Euclid	Queen (except 23 ft. 6 in.	Robinson opp house No. 48).	West	5
Evelyn	Annette	S. lim. house No. 238	West	4

TABLE No. 5.—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
737.0	"	741.0	Nov. 27, 1911	A. Johnson.
1,147.5	6-in. concrete	1,147.5	May 13, 1911	Day labor.
305.2	....	....	July 29, 1911	J. J. Thompson.
761.0	....	.....	June 23, 1911	Grant Contracting Co.
768.3	.....	.....	April 25, 1911	Wm. Bushell.
594.2	.....	.....	June 13, 1911	A. Johnson.
594.?	.....	....	June 8, 1911	"
1,148.5	6-in. concrete	1,148.5	May 17, 1911	Day labor.
843.0	.....	....	June 5, 1911	"
768.0	... .	.....	May 29, 1911	Grant Contracting Co.
503.7	6-in. concrete	511.7	June 30, 1911	A. J. Penberthy.
217.0	"	225.0	July 5, 1911	"
411.2	"	411.2	June 30, 1911	"
2,222.0	.....	....	Sept. 30, 1911	Wm. Bushell.
434.1	.....	.....	July 26, 1911	A. Gardner.
708.3	6-in. concrete	708.3	Aug. 29, 1911	Grant Contracting Co.
1,476.6	... .	....	July 25, 1911	Riverdale Con. Pav. Co.
540.8	6-in. concrete	559.0	Carried over to 1912.	A. Gardner & Co.
389.4	"	389.4	Sept. 4, 1911	Excelsior Constructing and Paving Co.
392.0	"	392.0	Sept. 2, 1911	Excelsior Constructing and Paving Co.
565.8	"	565.8	Sept. 6, 1911	Day labor
320.3	....	.....	Aug. 14, 1911	A. Gardner and Co.
500.0	....	.....	Oct. 4, 1911	J. J. Thompson.
1,491.6	6-in. concrete	14.0	Sept. 15, 1911	A. Johnson.
2,097.0	.....	.....	Oct. 18, 1911	Grant Contracting Co.
757.0	....	.....	Oct. 14, 1911	Day labor.
916.0	.....	.....	Sept. 22, 1911	Constructing and Pav. Co.
555.8	6-in. concrete	555.8	Oct. 21, 1911	R. J. Moyes.
550.5	"	550.5	Oct. 16, 1911	"
268.0	.....	....	Nov. 4, 1911	Day labor, order of Council
717.0	....	.....	July 5, 1911	Grant Contracting Co.
962.0	6 in. concrete	953.0	June 17, 1911	National Contracting Co.
962.0	"	953.0	June 19, 1911	" "
480.5	"	480.5	June 27, 1911	A. J. Penberthy.
460.0	"	460.0	June 27, 1911	" "
519.1	.....	.....	Aug. 11, 1911	Day labor.
411.0	.....	.....	July 25, 1911	Grant Contracting Co.

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Street.	From.	To.	Side.	Width in Feet.
Evelyn	Annette Except 100 ft. 6 in.	Woodside opp. house No. 164	West	4
Evelyn	Evelyn Cr.	S. lim. house No 163	East	4
Evelyn	St. John's Rd.	N. lim. house No. 239.	East	4
Ellerbeck	Hurndale.	N. City limits	East	5
Ellerbeck	Danforth.	Hurndale.	East	5
Erindale	Ellerbeck.	Don Mills Rd.	North	5
Ellerbeck	Erindale.	N. City limits	West	5
Elmer	Old north City limit	North end	East	4
Elmer	Old north City limit	North end	West	4
Englewood	Pape	Jones	North	5
Eaton	Danforth	North City limits	East	5
Ellsworth	Vaughan Rd.	Bracondale	South	
Ellsworth	Vaughan Rd.	Bracondale	North	
*Front, w	W. limit No. 66	52 feet further west	North	13
Follis	Clinton	Christie	South	5
Follis	Clinton	Christie	North	5
Front, e.	Sherbourne	Berkeley	South	6
Franklin	Ruskin	Royce	West	5
Franklin	Ruskin	Royce	East	5
Fairview	Annette	5 ft. s. of s. limit of house No. 73.	East	4
Follis	Manning	Clinton	South	5
Fuller	Marion	Pearson	West	5
Fuller	669 ft. n. of Queen.	Pearson	East	5
Fairview	St. John's Rd.	South lim. house No. 151.	East	4
Ferndale	St. Clair	North end	East	5
Ferndale	St. Clair	North end	West	5
Fernwood Park	Lyonde Cr.	Fir	West	4
Fernwood Park	Lyonde Cr.	Fir	East	4
Glendale	S. limit lot No. 28	145 ft. south	West	5
*Glen Rd.	St. Andrew's Gard's	Summerhill	West	5
*Glen Rd.	Summerhill	280 ft. north	East	4
Garden	Sorauren	Macdonnell	South	5
Garden	Sorauren	Macdonnell	North	5
Garden	Sorauren	730 ft. e. of Roncesvalles.	North	5
Garden	Sorauren	730 ft. e. of Roncesvalles.	South	5
Gormley	Lawton	West end	South	5
Grandview	Hampton	142 feet east	South	4½
Gerrard, e	Pickering	Hannaford	South	4½

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Con. Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
674.9	.....	.....	July 19, 1911	Grant Contracting Co.
507.0	.....	.....	July 18, 1911	" "
921.5	.....	.....	July 27, 1911	" "
1,222.4	6-in. concrete	1,238.4	Aug. 19, 1911	A. Johnson.
252.3	"	256.3	Aug. 12, 1911	"
435.0	"	435.0	Aug. 24, 1911	"
1,134.8	"	1,142.8	Sept. 5, 1911	"
750.0	"	750.0	Oct. 11, 1911	Queen City Con. Pav. Co.
749.8	"	749.8	Oct. 5, 1911	" "
1,260.4	"	1,245.0	Nov. 20, 1911	Riverdale Con. Pav. Co.
1,314.7	"	1,314.7	Nov. 22, 1911	R. J. Moyes.
1,102.4	6-in. concrete	1,102.4	June 3, 1911	National Contracting Co.
1,080.3	"	1,080.3	June 20, 1911	Wm. Bushell.
53.0	"	26.0	June 7, 1911	Day labor, order of Council
294.4	"	272.4	May 26, 1911	Constructing & Pav. Co.
291.2	"	273.0	May 26, 1911	" "
814.2	.....	.....	June 16, 1911	Day labor.
1,014.0	.....	.....	May 31, 1911	J. J. Thompson.
977.5	.....	.....	May 30, 1911	"
419.1	.....	.....	Aug. 15, 1911	"
294.5	.....	.....	Aug. 23, 1911	A. J. Penberthy.
304.0	.....	.....	Sept. 20, 1911	Day labor.
476.0	.....	.....	Sept. 6, 1911	"
1,019.5	.....	.....	Aug. 5, 1911	Grant Contracting Co.
528.8	6-in. concrete	528.8	Sept. 16, 1911	" "
530.8	"	530.8	Sept. 9, 1911	" "
407.2	"	407.2	Sept. 12, 1911	National Contracting Co.
420.8	"	420.8	Sept. 12, 1911	" "
145.0	.....	.....	Nov. 23, 1911	Day labor, order of Council
721.5	6-in. concrete	729.5	May 13, 1911	A. J. Penberthy.
279.5	.....	.....	May 13, 1911	"
759.2	.....	.....	June 26, 1911	Grant Contracting Co.
759.4	.....	.....	June 26, 1911	" "
642.7	.....	.....	May 11, 1911	Day labor.
642.7	.....	.....	May 27, 1911	"
1,188.0	6-in. concrete	1,188.0	May 19, 1911	Excelsior Con. & Pav. Co.
183.3	"	182.3	June 3, 1911	Riverdale Con. Pav. Co.
312.0	"	320.0	July 13, 1911	National Contracting Co.

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Street.	From.	To.	Side.	Width in Feet.
Gladstone	N. limit No. 441	A point 250 feet s.	East	5
Gilmour	Annette	Maher	West	5
Gilmour	Annette	St. John's Rd	East	5
Gilmour	Maher	St. John's Rd	West	5
Gifford	Spruce	Carlton	West	5
Gifford	Spruce	Carlton	East	5
Gerrard	Prust	Greenwoods	North	5
Garden	Glendale	Indian Rd	North	5
Glen Rd	Douglas Drive	Summerhill	East	5
Glen Rd	E. Roxborough	Douglas Drive	East	5
***Highland	360 ft. w. Schofield	N. limit lot No. 11	South & West.	5
*Howland	Old n. City limits (except 56 ft. at tra of Bridgman.)	Davenport Rd cks, and intersection	West	5
*Howland	Old n. City limits (except 51 ft. at tra of Bridgman.)	Davenport Rd cks, and intersection	East	5
*Harbord	Clinton	Montrose	North	5
*Harbord	Clinton	Montrose	South	5
*Hammersmith	150 ft. n. of Queen	North end	West	3½
*Hugo	Perth	West end	North	5
Heintzman	Dundas	425 ft. north	West	5
Heintzman	Dundas	412 ft. north	East	5
High Park Ave	Conduit	Bloor	West	5
Hugo	Perth	West end	South	5
Hook	Woodville	Weston Rd.	South	4½
Hook	Woodville	Bruce	North	4½
Howard Park Ave	15½ ft. w. of Roncesvalles.	Keele	South	5
Hallam	Dovercourt Rd	Westmoreland	South	5
Heyworth Crescent	Kingston Rd	Woodbine	South	4½
Heyworth Crescent	Kingston Rd	Woodbine	North	4½
Herbert	Old n. City limit	North end	West	5
Harbord	Bathurst	Markham	South	5
Hazelwood	Pape	E. lim. lot No. 1	South	4½
Hendrick	St. Clair	South end	East	4½
Hendrick	St. Clair	South end	West	4½
Hannaford	Kingston Rd	Lyall	West	4
Hampton	Hogarth	Sparkhall	West	5
Herbert	Queen	North end	East	5
Humberside	Mavety	Medland	North	5
Hogarth	Broadview	Logan	North	5
*Howard Pk.	Keele	Indian	North	5

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
250.0	.....	.....	Sept. 21, 1911	Day labor.
758.0	6-in. concrete	762.0	Aug. 28, 1911	Excelsior Con. & Pav. Co.
1,530.0	"	1,530.0	Sept. 6, 1911	J. J. Thompson.
517.2	"	521.2	Sept. 6, 1911	"
388.5	.....	.....	Aug. 21, 1911	R. J. Moyes.
410.2	.....	.....	Aug. 17, 1911	"
610.5	6-in. concrete	610.5	Sept. 20, 1911	Excelsior Con. & Pav. Co
642.5	"	642.5	Nov. 15, 1911	Day labor.
385.0	.....	.....	Oct. 4, 1911	"
306.0	.....	.....	Oct. 2, 1911	"
1,013.5	.....	.....	May 26, 1911	"
879.9	6-in. concrete	887.9	June 8, 1911	William Bushell.
760.3	"	768.3	June —, 1911	"
661.9	"	639.9	Car. over 1912	Day labor.
650.7	"	645.0	Car. over 1912	"
165.1	"	165.1	May 4, 1911	National Contracting Co.
336.0	"	293.0	May 18, 1911	Wm. Bushell.
465.0	"	439.0	May 13, 1911	Day labor.
591.7	"	412.0	May 10, 1911	"
1,295.5	.....	.....	April 30, 1911	"
324.5	6-in. concrete	301.0	May 19, 1911	Wm. Bushell.
759.9	.....	.....	May 31, 1911	Grant Contracting Co.
688.0	.....	.....	May 31, 1911	" "
1,887.8	.....	.....	June 8, 1911	Day labor.
277.0	.....	.....	June 28, 1911	National Contracting Co.
500.7	6-in. concrete	500.7	June 9, 1911	Excelsior Con. & Pav. Co.
528.0	"	528.0	June 14, 1911	" "
749.0	"	749.0	July 8, 1911	Queen City Con. Pav. Co.
296.3	.....	.....	July 15, 1911	A. Gardner & Co.
496.3	6-in. concrete	496.3	June 24, 1911	Riverdale Con. Pav. Co.
646.0	"	646.0	July 27, 1911	Wm. Bushell.
647.5	"	647.5	July 18, 1911	"
600.0	"	608.0	July 14, 1911	National Contracting Co.
752.3	"	746.8	Aug. 11, 1911	Riverdale Con. Pav. Co.
969.8	"	970.8	Oct. 25, 1911	Queen City Con. Pav. Co.
225.8	.....	.....	Aug. 15, 1911	Grant Contracting Co.
2,021.8	.....	.....	Nov. 20, 1911	A. Johnson.
436.0	6-in. concrete	436.0	June 20, 1911	Grant Contracting Co.

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Street.	From.	To.	Side.	Width in Feet.
‖‖Hillsboro'	358 ft. e. of Davenport Rd.	196 ft. east	North	4
Indian Rd	Algonquin	Wright	West	5
Island Roadway s. of Bay Front.	1,140 ft. e. of bridge on Chippewa.	3,500 ft. east (Ward's Island).		4
Indian Rd	Conduit	247 ft. s. of Central	East	5
Isleworth	Hammersmith	271 ft. east	South	4½
Indian Rd	Brighton Place	Conduit	West	4½
Indian Rd	S.s. Annette (prod.)	Humberside	East	4½
Juniper	Lee	Bellefair	North	5
Juniper	Lee	Bellefair	South	5
Jerome	500 ft. w. of Dundas	Indian Rd	South	5
*King	Jarvis	George	North	12.6-11.6
King	Jordan	186 ft. 9 in. west	South	11.9-11.2
Kingston Rd	Queen	West limit house No. 300.	West and North	5
Kippendavie	Queen	The Beach	West	5
Kingston Rd	Pickering	Lawlor	North	4
††Keele	Howard Park Ave.	500 ft. north	East	5
Ketchum	Scollard	Davenport Rd.	East	6
Kendal	Wells	446 ft. 3 in. south	West	5
Keele	Algonquin	Garden	East	5
Keele	Garden	South lim. lot No. 81, Plan 1242.	East	5
Keele	Bloor	400 ft. south	East	5
Keele	Ridout	400 ft. s. of Bloor	East	5
Kenneth	Dundas	West end	South	5
Kenneth	Dundas	West end	North	5
Lane 1st e. of Yonge.	Adelaide	133 ft. north	East	2 ft. 7 in.
***Lyndhurst	Melgund Rd	1,244 ft. 4 in. south	East	5
+Laing	Queen	Eastern	East	5
***Lennox	Markham	Euclid	South	5
Lansdowne	Lappin	Royce	West	5
Lonsdale	Lawton	610 ft. e. of Avenue Rd.	North	5
Lee	Queen	South end	West	5
Leslie	Queen	Sproatt	West	5
Lyall	Hannaford	Malvern	South	4
Leuty	Queen	1,105½ ft. south	East	5
Leuty	Queen	The lake	West	5
Logan	Danforth	North City limit	West	5
Logan	Wolfrey	Danforth	West	5
Logan	Grandview	Hogarth	West	5
Logan	Hogarth	Wolfrey	West	5
Lansdowne	Davenport Rd.	St. Clair	East	5

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
196.0	.....	.....	Sept. 7, 1911	Day labor, order of Council
313.4	6-in. concrete	321.4	May 25, 1911	Day labor.
3,596.0	.....	.....	July 15, 1911	"
495.2	6-in. concrete	495.2	July 11, 1911	National Contracting Co.
288.3	"	293.0	Aug. 1, 1911	A. Johnson.
838.9	"	838.9	Oct. 27, 1911	J. J. Thompson.
663.4	"	556.5	Oct. 10, 1911	Wm. Bushell.
463.4	"	463.4	Nov. 21, 1911	National Contracting Co.
351.2	"	359.2	Nov. 21, 1911	" "
147.2	"	147.2	July 20, 1911	" "
276.9	....	.....	June 10, 1911	Day labor.
157.2	....	.....	Oct. 14, 1911	Riverdale Con. Pav. Co.
4,415.3	....	... .	July 15, 1911	Excelsior Con. & Pav. Co.
1,402.7	6-in. concrete	1,410.7	Aug. 14, 1911	National Contracting Co.
358.1	.....	.. ..	July 19, 1911	" "
560.5	6-in. concrete	567.5	Oct. 16, 1911	Wm. Bushell.
361.5	"	336.5	Sept. 14, 1911	Day labor.
456.5	.....	....	Sept. 8, 1911	"
650.8	6-in. concrete	650.8	Oct. 26, 1911	"
350.0	"	350.0	Nov. 3, 1911	"
400.0	"	400.0	Nov. 29, 1911	"
407.7	"	407.7	Dec. 13, 1911	"
467.1	"	465.5	Oct. 17, 1911	Wm. Bushell.
455.0	"	447.8	Oct. 18, 1911	"
132.5	.....	.....	June 5, 1911	Day labor, order of Counci
1,258.8	... .	... .	Aug. 12, 1911	Day labor.
600.3	6-in. concrete	597.8	June 29, 1911	"
585.7	.....	....	Oct. 19, 1911	"
648.2	....	.....	Aug. 5, 1911	A. Gardner & Co.
1,207.3	.....	.....	Aug. 23, 1911	Excelsior Con. & Pav. Co.
1,393.0	.....	....	June 29, 1911	A. Johnson.
1,916.3	.....	.. . .	Aug. 10, 1911	A. Gardner & Co.
313.4	6-in. concrete	316.4	Aug. 12, 1911	"
1,152.6	.. ..	1,129.5	Aug. 30, 1911	National Contracting Co.
1,373.7	.....	1,397.5	Aug. 30, 1911	" "
1,404.4	6-in. concrete	1,404.4	Oct. 18, 1911	A. Gardner & Co.
812.1	.....	.....	Sept. 19, 1911	"
302.7	.....	.....	Sept. 23, 1911	"
314.3	.....	.....	Sept. 21, 1911	"
1,805.0	6-in. concrete	1,805.0	Nov. 11, 1911	Excelsior Con. & Pav. Co.

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Street.	From.	To.	Side	Width in Feet.
Lansdowne	Davenport Rd.	St. Clair	West	5
Logan	Albermarle	Grandview	West	5
***Markham	Barton.	300 ft. north	East	5
*Milan	Ramsay's Lane	Sydenham	West	3½
*Marjorie	440 ft. s. of Gerrard	Dagmar	West	5
*Myrtle	Jones	Leslie	South	4
*Margueretta	940 ft. n. of Bloor	Wallace	East	4½
*Montrose	Harbord	A point 250 ft. south	East	5
*Mechanics	Delaney Cr	Wyndham	West	4
*Marlborough	646 ft. e. of Avenue Rd.	Yonge	South	5
Marion	Sorauren	628 ft. west	North	5
Marion	Sorauren	628 ft west.	South	5
Marion	Sorauren	Fuller	North	5
Marion	Sorauren	Fuller	South	5
Manning	Olive	North end	East	5
Maplewood	Pape	300 ft. east	South	4½
Marjory	654 ft. s. of Gerrard	Dagmar	East	4½
Montrose	Harbord	250 ft. south	West	5
Morley	Old north City limit	Applegrove.	East	5
Montrose	S. lim., house No. 199.	592 ft. north	East	5
Moscow	Danforth	North City limits	East	4½
Moscow	Danforth	North City limits	West	4½
Montrose	Harbord	254 ft. 4 in. north	East	5
Milan	Ramsay's Lane	Sydenham	East	3½
Macaulay	Perth	716 ft. west	North	5
Macaulay	Perth	449 ft. west	South	5
Mulock	Junction Rd	288 ft. 4 in. north	East	4
Montrose	Harbord	254 ft. 4 in. north	West	5
Markham	300 ft. n. of Barton.	Follis	East	5
Moutray	Dufferin	Sheridan	North	5
Moutray	Dufferin	Sheridan	South	5
*McLean	Queen	720 ft. north	East	4
***Nina	Bathurst	Lyndhurst	North	5
Newsham	Brock	East end	South	4
Neepawa	Roncesvalles	Lynd	South	5
Norway Place	Woodbine	310 ft. east	North	4½
***Ossington	Bloor	Hallam	East	5
***Ossington	Hallam	Old n. City limits	East	5
*Oakmount	Bloor	Conduit	West	5
Oak	Sumach	East end	South	5
Oak	Sumach	East end	North	5
Osler	Davenport Rd.	Connolly	West	5
Ossington	Davenport Rd.	450 ft. s. of St. Clair.	West	5

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Concrete Curb.		Completed.			Contractor.
	Class.	Length in Feet.				
1,807.0	6-in. concrete	1,807.0	Oct.	25,	1911	Excelsior Con. & Pav. Co.
354.9	.....	.....	Oct.	27,	1911	A. Gardner & Co.
300.0	.....	.....	Oct.	9,	1911	Day labor.
319.8	6-in. concrete	324.8	May	8,	1911	A. J. Penberthy.
462.0	"	427.5	May	11,	1911	Excelsior Con. & Pav. Co.
641.6	"	637.6	April	29,	1911	Queen City Con. Pav. Co.
529.0	.....	.....	Aug.	31,	1911	Day labor.
247.4	6-in. concrete	247.4	July	6,	1911	Grant Contracting Co.
427.2	.....	.....	June	26,	1911	"
1,354.7	6-in. concrete	5.0	May	24,	1911	"
645.0	"	647.0	June	30,	1911	A. Gardner & Co.
644.2	"	646.0	July	3,	1911	"
454.8	"	440.8	June	24,	1911	"
454.0	"	441.0	June	21,	1911	"
1,105.6	.....	.....	Nov.	6,	1911	Day labor.
302.5	6-in. concrete	302.5	July	3,	1911	Riverdale Contracting Co.
243.0	"	243.0	June	22,	1911	A. Johnson.
274.0	"	282.0	July	13,	1911	Grant Contracting Co.
652.0	"	652.0	July	8,	1911	A. Johnson.
592.5	.....	.....	July	5,	1911	Constructing & Paving Co.
1,406.7	6-in. concrete	1,414.7	Sept.	26,	1911	A. J. Penberthy.
1,405.8	"	1,413.8	Sept.	26,	1911	"
254.2	"	254.2	Oct.	2,	1911	Day labor.
322.0	"	325.5	Sept.	23,	1911	National Contracting Co.
730.8	"	730.8	Nov.	1,	1911	Wm. Bushell.
462.5	"	446.5	Nov.	4,	1911	"
299.7	.....	.....	Oct.	27,	1911	Day labor.
254.2	6-in. concrete	254.2	Nov.	6,	1911	Elnor & Brown.
233.0	.....	.....	Oct.	9,	1911	Day labor.
499.5	6-in. concrete	489.5	Oct.	23,	1911	Wm. Bushell.
513.0	"	497.0	Oct.	26,	1911	"
715.2	"	727.2	Oct.	3,	1911	A. Johnson.
1,277.1	.....	.....	Aug.	2,	1911	Day labor.
305.3	6-in. concrete	292.1	Sept.	25,	1911	"
262.8	.....	.....	Sept.	12,	1911	"
310.0	6-in. concrete	310.0	Sept.	21,	1911	A. Johnson.
2,165.0	"	19.0	Sept.	23,	1911	J. J. Thompson.
976.2	.....	.....	Sept.	12,	1911	"
698.0	.....	.....	April	24,	1911	Grant Contracting Co.
1,104.2	.....	.....	July	4,	1911	National Contracting Co.
1,102.0	.....	.....	July	4,	1911	" "
542.3	6-in. concrete	542.3	July	15,	1911	Grant Contracting Co.
1,572.2	"	1,572.2	Sept.	6,	1911	Wm. Bushell.

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Street.	From.	To.	Side.	Width in Feet.
*Playter Boulevard..	Danforth	Playter Cr.....	West ..	5
*Playter Boulevard..	Danforth	Playter Cr.....	East....	5
*Playter Crescent ...	Ellerbeck	Jackman.....	North ..	5
*Playter Crescent ...	Ellerbeck	Jackman.....	South ..	5
Palmerston Gardens .	Palmerston	Manning.....	North ..	5
Palmerston Gardens .	Palmerston	Manning.....	South .	5
Pleasant Blvd.....	Pleasant	Avoca	South ..	5
Pleasant Blvd.	Pleasant	Avoca	North ..	5
Pauline	Bloor	990 ft. 10 in. north.	West ..	5
Pauline	Bloor	990 ft. 10 in. north.	East....	5
Pretoria.....	Don Mills Rd. ...	Sarah	South ..	5
Pretoria.....	Sarah	Don Mills Rd.	North ..	5
Pretoria.....	Ellerbeck	Don Mills Rd.	South ..	5
Pape	Danforth	North City limits ..	East...	5
Perth	Kingsley	Davenport Rd.....	West ..	5
Perth	Kingsley.....	Davenport Rd.....	East...	5
Poulette.....	Sydenham	Ramsay's Lane ...	West ..	$3\frac{1}{2}$
Poulette.....	Sydenham	Ramsay's Lane ...	East....	$3\frac{1}{2}$
Pearl	Simcoe	Lane 1st w. of York.	South .	$7-7\frac{3}{2}$
Paton Rd.	Symington	G.T.R. tracks	North ...	5
Pape	Danforth	North City limit ..	West ..	5
Pacific	176 ft. n. of Dundas.	Vine	West ..	5
Pricefield Rd.	49 ft. west of Cluny.	207 ft. further west.	North ..	$4\frac{1}{2}$
Pleasant.....	E. lim. house No. 45.	149 ft. 5 in. fur. east.	South ..	5
Queen	Power.....	246 feet east	South ..	6
Queen	Eastern	E.s. Kingston Rd. (prod.)	South ..	5
Queen	McCaul	40 ft. 7 in. east ...	North ..	$10\frac{7}{12}$
Queen, e	$10\frac{1}{2}$ ft. e. No. 2211	100 feet further east	South ..	5
Quebec	S. limit lot No. 29 (except opposite	N. limit lot No. 27 lot No. 28.)	East....	5
*Rebecca	Givens.....	Dundas	North ..	4
*Rushton Rd.	St. Clair.....	Benson	East....	$4\frac{1}{2}$
*Rushton Rd.	St. Clair	Benson	West ..	$4\frac{1}{2}$
*Russell Hill Rd.....	Heath	Lonsdale.....	West ..	5
*Russell Hill Rd.....	Heath	Lonsdale.....	East....	5
Radford Rd.....	Alhambra	Indian Rd..... ..	South ..	5
Ritchie	A point 309 ft. n. of Dundas.	225 ft. 6 in. further north.	East....	5
Runnymede Rd.	Annette	St. John's Rd.	East....	5
Royce.....	Symington	Perth	South ..	5
Roblocke	Irene Pl.....	408 ft. 3 in. north	West ..	5
Roblocke	Irene Pl.....	354 ft. 6 in. north	East....	5
Rainsford Rd.	Queen	850 feet north....	West ..	5
Rainsford Rd.	Queen	850 feet north ...	East....	5

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
423.0	6-in. concrete	431.0	May 13, 1911	A. Johnson.
422.5	"	430.5	May 13, 1911	"
883.7	"	891.7	May 30, 1911	"
920.6	"	928.6	May 30, 1911	"
639.0	"	647.0	June 20, 1911	Grant Contracting Co.
639.0	"	647.0	June 20, 1911	" "
645.0	"	645.0	May 13, 1911	" "
615.0	"	615.0	May 13, 1911	" "
990.8	"	990.8	Aug. 1, 1911	Excelsior Const. & Pav. Co
990.2	"	990.2	July 24, 1911	" "
272.5	"	272.5	July 8, 1911	Riverdale Con. Pav. Co.
272.0	"	272.0	July 31, 1911	" "
310.0	"	310.0	Aug. 2, 1911	" "
1,358.4	"	1,382.4	Oct. 10, 1911	A. J. Penberthy.
800.6	"	800.6	Oct. 5, 1911	Excelsior Const. & Pav. Co.
799.8	"	799.8	Oct. 7, 1911	" "
330.0	"	334.9	Sept. 23, 1911	National Contracting Co.
327.5	"	320.0	Sept. 23, 1911	" "
482.3	.....	.....	Oct. 10, 1911	A. Johnson.
637.3	.....	.....	Nov. 29, 1911	Elnor & Brown.
1,412.5	6-in. concrete	1,420.5	Nov. 11, 1911	A. J. Penberthy.
180.0	.....	.....	Sept. 12, 1911	William Bushell.
205.8	.....	.....	Aug. 23, 1911	Day labor, order of Council.
149.0	.....	.....	May 13, 1911	Grant Contracting Co.
246.0	.....	.....	June 17, 1911	Day labor.
569.3	.....	.....	July 3, 1911	A. Johnson.
51.0	.....	.....	Oct. 20, 1911	Day labor, order of Council
100.0	.....	.....	Oct. 14, 1911	" "
100.0	.....	.....	Oct. 7, 1911	William Bushell.
323.0	.....	.....	Oct. 3, 1911	Day labor.
570.6	6-in. concrete	570.6	Oct. 18, 1911	J. J. Thompson.
570.0	"	570.0	Oct. 17, 1911	"
700.0	.....	.....	June 3, 1911	Grant Contracting Co.
699.5	.....	.....	May 31, 1911	" "
826.3	.....	.....	June 21, 1911	National Contracting Co.
230.8	6-in. concrete	230.8	June 10, 1911	Day labor.
1,287.5	"	1,287.5	July 13, 1911	Empire Constructing Co.
291.0	.....	.....	July 7, 1911	Grant Contracting Co.
374.3	6 in. concrete	374.3	Nov. 25, 1911	J. J. Thompson.
352.6	"	352.6	Nov. 21, 1911	"
831.3	"	840.7	Aug. 1, 1911	National Contracting Co.
829.7	"	839.1	Aug. 1, 1911	" "

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Street.	From	To	Side.	Width in Feet.
Royce	Lansdowne	East end	North	5
Royce	Lansdowne	East end	South	5
Salisbury	192 ft. 8 in. west of Sackville.	Metcalfe	North	2—3½
Sheridan	44 ft. 9 in. south of Moutray.	39 feet further south	West	4½
*Standish	Summerhill	280 feet north	West	4
*Standish	280 ft. n. Summerhill	548 feet fur. north	West	4
*Strathcona	Carlaw	Pape	South	5
*Strathcona	Carlaw	Pape	North	5
Sutton	Sackville	Blair	South	3½
Sutton	Sackville	Regent	North	3½
Sarah	Danforth	Westmount	West	5
Symington	Bloor	Paton Rd.	East	5
Sydenham	Parliament	Sumach	North	5
Salem	Bloor	Shanley	West	5
Sarah	Danforth	North end	East	5
South Drive	May	165 feet east	North	4
Summerhill Gardens.	Summerhill	Summerhill	W., N., & East.	5
Summerhill Gardens.	Summerhill	Summerhill	E., S., & West.	5
Salisbury	Sackville	East end	North	4
*Spadina Rd	St. Clair	Bridge	West	5
¶Sylvan	137 ft. w. Havelock	Dufferin	North	5
†Sumach	Opp. Riverdale Pk.		East	
Strathcona	Pape	East end	North	4
St. Clair	Yonge	1,083 ft. east	North	5
*St. Clair	Gunn's Rd	300 ft west	North	5
St. Clair	Runnymede Rd.	1,403 ft. 5 in. east	South	5
St. David	Parliament	Sackville	North	5
St. David	Parliament	Sackville	South	5
St. Clarens	College	Dundas	West	5
St. Clair	156 ft. e. of Yonge.	944 ft. further east.	South	5
St. John's Place	Dundas	Maria	West	4
St. John's Rd.	Dundas	Gilmour	North	5
¶¶¶St. Clair	Keele (except 145 ft. at	E.s. King railway tracks).	North	
Trinity Square	195 ft. 5 in. w. of e.s. of e. branch.	105 ft. 5 in. westerly and southerly.	N.s. of n. branch.	4
*Terauley	Gerrard	Buchanan	East	5
Thorn	Shaw	Crawford	South	5
Temperance	104 ft. 8 in. w. of Bay	Sheppard	South	5
Temperance	Bay	104 ft. 8 in. west	South	5
Temperance	160 ft. 7 in. w. of Bay	Sheppard	North	5

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
689.5	6-in. concrete	697.5	Sept. 7, 1911	A. Gardner & Co.
757.4	"	769.4	Sept. 7, 1911	"
201.2	"	16.6	Nov. 7, 1911	Day labor, order of Council
39.0	.....	....	Sept. 26, 1911	" "
288.0	....	.....	June 1, 1911	A. J. Penberthy.
548.0	.....	.....	June 1, 1911	"
613.3	6-in. concrete	617.3	May 18, 1911	Queen City Con. Pav. Co.
614.0	"	618.0	May 18, 1911	" "
182.6	"	182.6	Aug. 26, 1911	Day labor.
362.6	"	362.6	Aug. 26, 1911	"
1,3[illegible]9.3	"	1,365.3	Aug. 23, 1911	Riverdale Con. Pav. Co.
835.8	.....	....	Sept. 28, 1911	Day labor.
472.7	6-in. concrete	488.7	June 1, 1911	Riverdale Con. Pav. Co.
1,139.0	.....	.....	Aug. 29, 1911	Empire Constructing Co.
1,552.3	6-in. concrete	1,560.0	June 23, 1911	Queen City Con. Pav. Co.
175.0	"	190.0	June 7, 1911	Day labor.
1,065.9	.....	.....	Sept. 28, 1911	Grant Contracting Co.
952.0	.....	.....	Sept. 23, 1911	" "
463.0	.....	.....	Oct. 7, 1911	Riverdale Con. Pav. Co.
186.0	6-in. concrete	186.0	May 31, 1911	Day labor.
611.0	.....	....	Dec. 7, 1911	"
442.2	.....	....	May 25, 1911	Day labor, order of Council
626.2	6-in. concrete	626.2	July 10, 1911	Riverdale Con. Pav. Co.
1,092.1	.....	....	Nov. 25, 1911	Britnell Contracting Co.
300.7	.....	....	May 8, 1911	Wm. Bushell.
1,394.3	.....	.....	Aug. 21, 1911	Grant Contracting Co.
737.0	6-in. concrete	777.0	July 22, 1911	A. Gardner & Co.
750.1	"	780.1	July 20, 1911	"
399.3	.....	.....	Aug. 21, 1911	Joseph Payne.
926.0	.....	.....	Sept. 4, 1911	Grant Contracting Co.
321.6	6-in. concrete	321.6	Aug. 6, 1911	J. J. Thompson.
1,215.2	....	.....	July 27, 1911	Empire Construction Co.
1,004.0	.....	.....	July 27, 1911	J. J. Thompson.
104.4	....	.....	Oct. 13, 1911	Day labor, order of Council
522.0	.....	....	April 15, 1911	Queen City Con. Pav. Co.
304.8	6-in. concrete	300.8	July 22, 1911	Wm. Bushell.
224.4	"	240.4	Aug. 2, 1911	Day labor.
104.7	"	104.7	Aug. 2, 1911	"
177.7	.....	.....	Nov. 22, 1911	"

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Street.	From.	To.	Side.	Width in Feet.
Tennis Crescent	Broadview	272 ft. east.....	North .	4½
Temple	Dufferin	Tyndal	North ..	5
Temple	Dufferin	Tyndal	South ..	5
Thorburn	Dufferin	Tyndal	North ..	5
Thorburn	Dufferin	Tyndal	South ..	5
Victor	Logan	152 ft. east.....	South ..	4½
Vivian	100 ft. s. of Gerrard	South end.....	East....	3
****Vaughan Rd. . .	Bathurst.....	St. Clair	West ..	5
¶¶Vivian	Gerrard	100 ft. south	West ..	3
*Willoughby	Humberside	Abbott	East....	4½
*Whitney	Danforth	N. City limits ...	West ..	5
Winchester	Sackville..... ..	Sumach	South ..	6
Whitney	Glen Rd.	E. Roxborough....	North .	5
Woodville	Dundas	N. limit No. 489...	East....	4½
Woodville	Dundas	Railway tracks ...	West ..	4½
Ward	Wallace....	Lappin	East....	4½
Wroxeter.....	Carlaw	Pape	North ..	5
Wroxeter	Carlaw	Pape	South ..	5
Wells Hill Rd.	Nina	Melgund Rd.... ..	West ..	5
Wright	732 ft. e. of Roncesvalles.	Sorauren	North ..	5
Wright	732 ft. e. of Roncesvalles.	Sorauren	South ..	5
Western	Humberside	Brighton Place ...	East....	5
Woodville	Humberside	130 ft. north ...	East....	5
Westmoreland	Geary	Davenport Rd. ...	East....	4½
Westmoreland	Geary	Davenport Rd.	West .	4½
Wheeler.....	Queen	1,397 ft. north	West .	5
Wheeler.....	1,247 ft. n. of Queen	161 ft. further north	East....	5
Woodycrest	Danforth.....	North City limits ..	West ...	5
Woodycrest	Danforth...	North City limits ..	East....	5
Western.....	Brighton Pl	294 ft. south	East....	4½
Willow	315 ft. n. of Cedar..	595 ft. n. of Pine ..	West . .	4
Willow	Queen	Cedar	West ...	4
Wallace	Symington, easterly	to Railway tracks ..	South ..	5
Woodville	Conduit	600 ft. south	East....	5
Waverley Rd	Queen	The Beach	West . .	5
Willow	Queen	W. lim. house No. 175.	East....	4½
Westmount	209 ft. w. of Sarah .	325 ft. further w...	North ..	4
Yonge	Lawton	North City limits ..	West ...	6
Yarmouth Rd	Clinton	Christie	North ..	4½

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
297.8	6-in. concrete	300.0	Oct. 7, 1911	R. J. Moyes.
400.0	"	418.0	Nov. 27, 1911	Grant Contracting Co.
400.0	"	418.0	Nov. 27, 1911	" "
401.0	"	419.0	Oct. 31, 1911	" "
412.0	"	419.0	Nov. 4, 1911	" "
168.3	"	3.5	Nov. 11, 1911	Day labor, order of Council
106.0	....	.....	Oct. 6, 1911	" "
726.3	....	.....	July 22, 1911	J. J. Thompson.
102.0	....	.....	Aug. 3, 1911	A. J. Penberthy.
841.7	6-in. concrete	849.7	May 9, 1911	J. J. Thompson.
1,396.2	"	1,396.2	May 31, 1911	Queen City Con. Pav. Co.
695.0	"	43.0	May 11, 1911	Riverdale Con. Pav. Co.
1,040.0	.....	....	June 17, 1911	A. J. Penberthy.
403.3	6-in. concrete	414.0	June 14, 1911	Grant Contracting Co.
614.6	"	621.6	June 14, 1911	" "
941.1	"	923.1	July 10, 1911	Wm. Bushell.
606.5	"	610.5	June 20, 1911	Riverdale Con. Pav. Co.
610.0	"	614.0	June 20, 1911	" "
780.2	"	788.2	June 6, 1911	Excelsior Con. & Pav. Co.
642.3	"	650.3	Nov. 10, 1911	Wm. Bushell.
638.7	"	624.3	Nov. 18, 1911	"
359.5	"	359.5	Aug. 1, 1911	"
124.3	"	124.3	Aug. 5, 1911	"
1,331.8	"	1,331.8	Aug. 22, 1911	J. J. Thompson.
1,331.8	"	1,331.8	Sept. 7 1911	"
1,409.5	"	1,413.5	Sept. 16, 1911	R. J. Moyes.
159.4	"	159.4	Sept. 16, 1911	"
1,408.1	"	1,424.1	Sept. 29, 1911	Riverdale Con. Pav. Co.
1,410.7	"	1,426.7	Sept. 18, 1911	" "
255.0	"	255.0	Sept. 8, 1911	Wm. Bushell.
975.5	"	979.5	Oct. 20, 1911	National Contracting Co.
448.3	"	448.3	Nov. 1, 1911	" "
588.6	... .	....	Sept. 13, 1911	A. Gardner.
598.3	6-in. concrete	598.3	Nov. 25, 1911	Excelsior Con. & Pav. Co.
1,442.5	..... .	....	Sept. 29, 1911	R. J. Moyes .....
1,935.7	6-in. concrete	1,935.7	Nov. 1, 1911	National Contracting Co.
290.8	....	.....	Aug. 26, 1911	Riverdale Con. Pav. Co.
433.0	6-in. concrete	10.0	Sept. 21, 1911	Day labor.
304.8	....	.....	July 4, 1911	James Payne.

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Street.	From.	To.	Side.	Width in Feet.
Yarmouth Rd	Clinton	Christie	South	4½
Yonge	130 ft. n. of Summerhill.	68 ft. s. of St. Clair	East	6
		Total		
		Contract Works		
		Work by Day labor		
		" " O. of C.		

† Estimates for 1910.
|| Taken over from Empire Construction Co.
+ Carried over from 1909, taken over from E. H. Schoales.
§ Carried over to 1912.
* Carried over from 1910.
** Taken over from York Concrete Paving Co., carried over from 1910.
*** Taken over from Forcott Contracting Co., carried over from 1910.
¶ Curb constructed by contractor for pavement, with pavement.
¶¶ Laid in conjunction with pavement.
**** Taken over from Forcott Contracting Co., carried over from 1910, 157.4 ft. laid by City Engineer.
¶¶¶ From Weston Rd. to e. s. of King St. not constructed.
†† Separate curb recommendation to Ridout St.
||| Estimates for 1911.

PRIVATE WALKS.

No.	Street.	From.	To.	Side.	Width in Feet.
1	Bloor W	Opp. 993-993½-995.		South	7.8
2	Cumberland	Opp. No. 8		North	3.5
3	Yonge	Opp. No. 106, Liggett's Drug Store		West	11
4	Dundas	Cor. Heintzman		North	12.5
5	Front	Berkeley	283 ft. 3 in. west.	South	6
6	King	Opp. Bank of Quebec		South	11.8
7	Lansdowne	Street Rly. car barns		West	6
8	Quebec	Opp lot No. 28		East	4.5 and curb.

TABLE No. 5—*Continued.*

CONCRETE SIDEWALKS.

Length in Feet.	Con. Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
274.3	.....	.....	July 4, 1911	James Payne.
1,539.3	.....	.....	Oct. 30, 1911	Grant Contracting Co.
278,665.3	52.777 miles	154,178.9	29.199 miles.	
233,694.4	44.260 "	138,224.0	26.178 "	
41,586.2	7.876 "	15,663.3	2.966 "	
3,384.7	0.641 "	291.6	0.055 "	

PRIVATE WALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
60.8	.....	.....	Nov. 10, 1911	J. Montgomery, 32 Thorne Street.
33.3	.....	.....	April 22, 1911	Walter Davidson.
23.7	.....	.....	April 6, 1911	Buckhurst.
68.5	.....	.....	May 16, 1911	City Engineer.
238.3	.....	.....	June 19, 1911	"
35.2	.....	.....	Oct. 24, 1911	Riverdale Contracting Co.
562.2	.....	.....	Oct. 22, 1911	Toronto Rly. Co.
50.0	.....	50.0	Nov. 5, 1911	Wm. Bushell.

TABLE No. 5—*Continued.*

PRIVATE WALKS.

No.	Street.	From.	To.	Side.	Width in Feet.
9	Quebec	South limit of house No. 215.	351 ft. 7 in. north, except opp. lots No. 27-28-29.	East	4.5 and curb.
10	Sackville	South-east cor. Amelia			7
11	Vaughan Rd. and	St. Clair (south-east cor.), opp. Dominion Bank.			5
12	Vancouver	N.-e. cor. Queen			4.5 and curb.
13	Vivian	102 ft. s. of Gerrard	108 ft. 7 in. fur. s.	West	3

WALKS REMOVED AND RECONSTRUCTED DUE TO THE CONSTRUCTION OF NEW STREET RAILWAY TRACK ALLOWANCE.

Street.	From.	To.	Side.	Width in Feet.
Adelaide	Spadina	Bathurst	North	5
Adelaide	Spadina	Portland	South	5
Harbord	Markham	Clinton	South	5
Harbord	Bathurst	Spadina	North	5
Harbord	Bathurst (Ex. from Robert St.	Spadina to Brunswick Ave.)	South	5
Harbord	Bathurst	Clinton	North	5
Ossington	Harbord	Bloor	East	5
Ossington	S s. Harbord (produced).	Bloor	West	5
Victoria	Queen	Wilton	East	5
Victoria	Queen	Wilton	West	5
Wilton	Sherbourne	Ontario	North	6
Wilton	Sumach	River	South	5
Wilton	Parliament	River	North	5
Wilton	Church	Sherbourne	North	6
Wilton	Church	Sherbourne	South	6

TABLE No. 5—*Continued.*

PRIVATE WALKS.

Length in Feet.	Concrete Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
201.7	.....	201.7	Nov. 5, 1911	Wm. Bushell.
50.9	.....	.....	April 26, 1911	Queen City Con. Pav. Co.
128.5	.....	.....	Oct. 22, 1911	J. J. Thompson.
101.0	....	101.0	Aug. 3, 1911	A. Johnson.
108.7	.....	....	Aug. 3, 1911	A. J. Penberthy.
1,662.8	= .315 miles.	352.7	= .069 miles.	

WALKS REMOVED AND RECONSTRUCTED DUE TO THE CONSTRUCTION OF NEW STREET RAILWAY TRACK ALLOWANCE.

Length in Feet.	Curb.		Completed.	Contractor.
	Class.	Length in Feet.		
1,969.4	....	.....	July 12, 1911	Day labor.
1,269.2	.....	.....	July 26, 1911	"
1,283.0	.....	.....	July 12, 1911	"
1,837.0	....	.....	August 2, 1911	"
1,318.5	....	.....	July 26, 1911	"
1,583.0	.....	.....	June 28, 1911	"
1,240.0	....	....	Sept. 20, 1911	"
1,291.0	....	....	Oct. 18, 1911	"
1,181.0	.....	.....	Sept. 27, 1911	"
1,165.0	... .	.....	Sept. 20, 1911	"
647.0	.....	.....	Oct. 11, 1911	"
622.0	.....	.....	July 5, 1911	"
2,032.0	..... .	.....	June 14, 1911	"
1,620.0	.....	.....	August 23, 1911	"
1,360.0	.....	.....	Sept. 13, 1911	"
20,418.1 =3.867	lineal feet. miles.			

TABLE No. 6.

Class of Work.	Total Square Yards in City.	Total Miles in City.	Square Yards Laid in 1911.	First Year Laid.	Maximum Grade of Pavements.	Guaranteed Period of Years.	Maximum Cost per Square Yard in 1911.	Minimum Cost per Square Yard in 1911.	Average Cost per Square Yard in 1911.	Remarks.
					%					
Asphalt	2,235,384	143.51	187,861	1888	4.73	5	2.25	2.07	$2.17\frac{3}{10}$	Heavy (prices).
						5	2.05	1.81	1.96	Medium (prices).
						5	1.57	1.57	1.57	Light (prices).
Asphalt Block	76,201	5.98	24,175	1904	6.46	5	.....	.....	.....	6-in. con. (prices).
						5	3.32	3.25	$3.28\frac{5}{10}$	4-in. con. (prices).
Brick on Concrete	401,409	27.55	27,801	1893	5.50	5	.....	.....	.....	4-in. con. (prices).
						5	2.65	2.37	2.49	On 4-in. con. (prices).
Brick (Blk.)						5	2.85	2.65	$2.75\frac{6}{10}$	On 6-in. con. (prices).
Brick on broken stone	15,031	.....	.....	1899	.....	5	.....	.....	.....	None laid in 1911.
Brick on Gravel	32,009	.....	.....	1896	.....	5	.....	.....	.....	None laid in 1911.
†Cedar Block	.....	10.41	.....	1881	3.78	5	.....	.....	.....	None laid in 1911.
Cedar Block	.....		.....	.....	.....	5	.....	.....	.....	None laid in 1911.
Gravel	.....	21.56	.....	1880	.....	1	.....	.....	.....	None laid in 1911.
*Scoria and Granite	81,882	2.16	661	1884	.....	5	.....	.....	.....	No tender in 1911.
Macadam	.....	39.11	31,376	.....	8.80	1	1.75	1.54	$1.66\frac{3}{10}$	First class (prices).
Tar Macadam	29,998	1.90	.....	1900	3.70	1	.....	.....	.....	None laid in 1911.
Bitulithic	465,569	31.98	85,276	1904	10.94	5	2.16	2.13	$2.14\frac{5}{10}$	On 4-in. con. base (prices).
							2.45	2.33	2.39	On 6-in. con. base (prices).

† On concrete.

* Street Railway track allowance not included in total mileage.

DIAGRAM SHOWING FLUCTUATIONS OF PAVEMENTS.

1897—1911

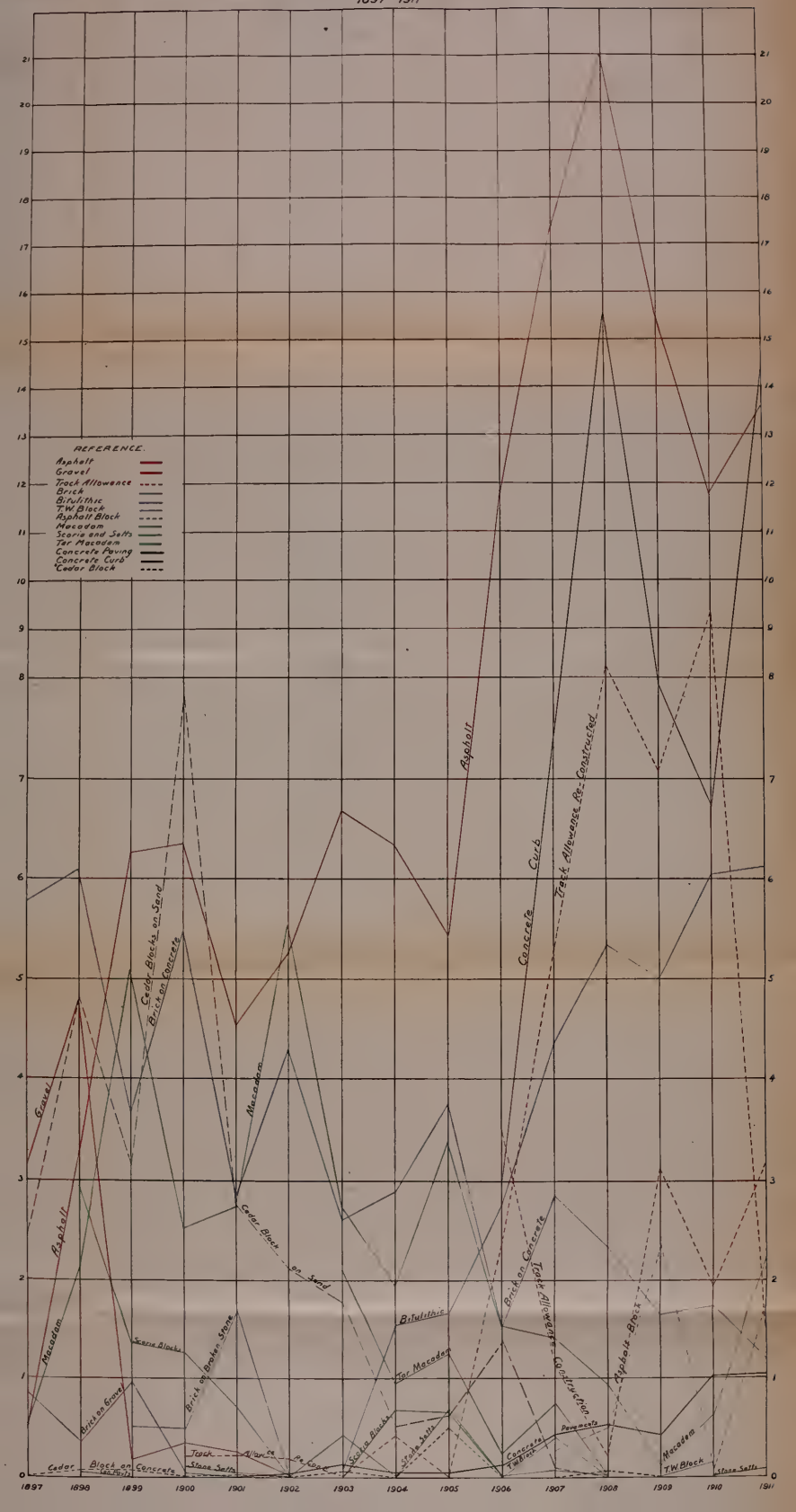


TABLE No. 7.

MILEAGE OF CONCRETE AND BRICK SIDEWALKS CONSTRUCTED IN THE CITY OF TORONTO.

Year.	Cement Concrete.	Brick.	Total.
Up to 1889	1.190		1.190
1890	1.426		1.426
1891	1.950		1.950
1892	1.508		1.508
1893	2.259		2.259
1894	1.137		1.137
1895	1.918		1.918
1896	0.612	0.204	0.816
1897	1.050	0.820	1.870
1898	2.107	1.190	3.297
1899	5.470	0.290	5.760
1900	15.227	0.038	15.265
1901	17.305	0.511	17.816
1902	27.360	0.049	27.409
1903	34.896	0.093	34.989
1904	31.058	0.001	31.059
1905	37.500	0.037	37.537
1906	43.536	0.131	43.667
1907	58.309		58.309
1908	55.101	0.303	55.404
1909	52.839		52.839
1910	54.679		54.679
1911	*53.494		*53.494
Totals	501 93!	3.667	505.598

* In addition to this mileage there were 3.867 miles of concrete walk reconstructed in connection with the new track allowance work. Total length of concrete walk laid in 1911, therefore, 53.494+3.867=57.361 miles.

TABLE No. 8.

CONCRETE WALKS.

Street.	Side.	From.	To.	Width in Feet.	Position.	Length in Feet.
Armstrong	N	1,270 ft. 5 in. w. Dufferin.	Emerson	5	With curb ..	142.5
Armstrong	S	1,270 ft. 5 in. w. Dufferin.	Emerson	5	With curb ..	143.0
Algonquin	N	Indian Rd.....	Keele	5	With curb ..	566.4
Alvin	E	St. Clair.....	North end	5	With curb .	529.2
Awde	S	Brock	East end.....	5	With curb ..	291.5
Brighton	S	Pape	East end.....	4	Next curb ..	308.4
Boon	W	St. Clair.....	Ascot	5	With curb ..	754.5
*Bellefair	E	1,346 ft. 8 in. n. of Queen.	131 ft. fur. north	3½	Next curb ..	131.0
Bloor	S	Dundas	Alhambra	5	3 ft. from st. line.	315.5
*Binscarth	N	E.s. house No. 26.	W.s. house No. 32.	5	Next curb ..	49.0
*Binscarth	N	W.s. house No. 20.	133 ft. 10 in. w.	5	Next curb ..	131.0
Brighton Place	S	Indian Rd.....	Western	4	11½ ft. from st. line.	431.8
Brighton Place	N	Indian Rd.....	Western	4	11½ ft. from st. line.	377.4
*Beatrice	W	986 ft. north of College.	84 ft. fur. north	4	With curb ..	83.7
*Binscarth Rd. and Highland Ave.	N	133 ft. 10 in. w. of west side of No. 20 Binscarth Rd.	100 ft. fur. west	5	Next curb ..	100.0
Churchill	N	Dovercourt ...	722 ft. east....	6	Next curb ..	705.5
*Carling	E	Bloor	Irene Place ..	4½	Next curb ..	195.2
*Chestnut.....	W	Edward	1st lane north .	5	Next curb ..	141.5
*Crawford	W	1,837 ft. south of Bloor.	114 ft. 6 in. fur. south.	5	With curb ...	114.6
Carlaw	E	Riverdale (produced).	Bain Ave.	....	.....	.....
Cooper	E	C. P. R.	Davenport	5	With curb ..	1,232.4
Cooper	W	C. P. R.	109 ft. 9 in. s. of Davenport.	5	With curb ..	1,192.2
Cottingham ..	N	Avenue Rd....	Rathnally	5	With curb ..	657.3
Duggan	N	Lawton ... ,	West end	5	With curb ..	1,147.5
Duggan	S	Lawton	West end	5	With curb ..	1,147.5

TABLE No. 8.

Concrete Walks.

City Tender per ft.	Length in miles on a basis of 5 feet wide.	Next lowest tender, per lineal foot.	Actual cost of work included in tender, per lineal ft.	Cost of work not included in tender.	Cost of work included in tender.	Total cost of work exclusive of interest on money.	The difference between the contractor's cost and cost based on contractor's lowest tender.	
							Gain.	Loss.
$ c.		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1 10	.027	1 32	1 07	22 20	137 45	159 65	5 61	.....
1 10	.027	1 32	98	10 80	126 81	127 61	13 05	.....
1 10	.107	1 20	98	6 25	559 69	565 94	91 67	.....
1 13	.100	1 25	1 01	9 50	539 02	548 52	70 60	.....
1 10	.055	1 12	1 10	30 90	322 81	353 71	3 67	.....
54	.047	54	55	24 63	169 98	194 61	.....	3 44
94	.143	94	1 11	74 00	850 45	924 45	.....	138 81
.....	.017	.....	.....	.....	.....	.....	.....	.....
61	.060	63	61	82 50	193 34	275 84	3 42	.....
.....	.009	.....	.....	.....	30 30	.....	.....	.....
.....	.025	.....	.....	.....	89 93	.....	.....	.....
54	.066	62	61	87 43	177 59	265 02	.....	4 55
54	.057	62	71	64 22	297 44	361 66	.....	47 96
.....	.013	.....	.....	.....	.....	.....	.....	.....
.....	.019	.....	.....	.....	.....	.....	.....	.....
75	.160	78	54	18 75	382 26	401 01	168 03	.....
.....	.033	.....	.....	.....	.....	.....	.....	.....
.....	.027	.....	.....	.....	86 07	.....	.....	.....
.....	.021	.....	.....	.....	98 44	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
1 07	.233	1 21	96	109 50	1,187 84	1,297 34	167 80	.....
1 07	.226	1 21	83	67 00	996 26	1,063 26	315 16	.....
68	.124	72	60	22 71	360 00	418 71	77 25	.....
1 15	.217	1 20	1 03	82 25	1,178 67	1,260 92	198 35	.....
1 03	.217	1 09	96	132 00	1,103 48	1,235 48	78 45	.....

TABLE No. 8—*Continued.*

CONCRETE WALKS.

Street.	Side.	From.	To.	Width in Feet.	Position.	Length in feet.
Davenport	S	Avenue	Bedford	5	Next curb ..	843.0
Douglas	N	Glen Rd.....	Summerhill ...	5	1 ft. from st. line.	757.0
Dunedin	W	Shudell	Baird	5	With curb ..	565.8
Euclid	W	Queen	Robinson	5	Next curb ..	549.5
*Erie	E	Dundas	South end	3	2 ft. from st. line.	26.8
*Front	N	West limit lot No. 66.	52 feet further west.	12½	Next curb. ..	49.0
*Front	S	Frederick	Sherbourne. ..	6	4½ feet from curb.	69.3
Front	S	Sherbourne. ..	Berkeley.....	6	Pres. position	744.9
Fuller	E	669 feet north of Queen.	Pearson	5	Next curb. .	476.0
Fuller	W	Marion	Pearson	5	Next curb. ...	304.0
Garden	N	Sorauren.....	730 feet east of Roncesvalles.	5	Next curb. ..	642.7
Garden	S	Sorauren.....	730 feet east of Roncesvalles.	5	Next curb. ..	642.7
Gladstone. ...	E	North limit No. 441.	250 feet south .	5	Next curb. ..	250.0
*Glendale	W	South limit lot No. 28.	145 feet further south.	5	Next curb. ..	145.0
*Garden	N	Glendale.....	Indian Road ..	5	With curb. ..	643.5
Glen Road ...	E	Douglas Drive.	Summerhill. .	5	Next curb. ..	385.0
Glen Road	E	East Roxboro'.	Douglas Drive.	5	17 ft. 2 in. from st. line.	306.0
¶Harbord	N	Clinton.	Montrose			
¶Harbord	S	Clinton.	Montrose			
Highland	S & W	360 feet west of Schofield.	North limit lot No. 11.	5	Varying in width.	1,013.5
Heintzman	W	Dundas.	425 feet north .	5	With curb. ..	436.0
Heintzman	E	Dundas.	412 feet north .	5	With curb. ..	422.0
High Park Ave.	W	Conduit	Bloor	5	12 feet from street line.	1,295.5
Howard Park Ave.	S	15½ feet west of Roncesvalles.	Keele	5	Next curb. .	1,887.8
Indian Road ..	W	Algonquin	Wright.	5	With curb. ..	313.4
Island	S	1,140 ft. east of Chippewa.	3,500 ft. further east.	4	With curb. ..	3,596.0

TABLE No. 8—*Continued.*

CONCRETE WALKS.

City's Tender per ft.	Length in miles on a basis of 5 feet wide.	Next lowest tender, per lineal foot.	Actual cost of work included in tender, per lineal ft.	Cost of work not included in tender.	Cost of work included in tender.	Total cost of work, exclusive of interest on money.	The difference between the contractor's cost and cost based on contractor's lowest tender.	
							Gain.	Loss.
$ c.		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
70	.160	75	69	33 96	581 37	615 23	50 88	.....
70	.143	74	94	153 66	714 99	868 86	.....	154 80
1 03	.107	1 05	90	49 00	513 30	526 30	80 79	.....
1 05	.104	1 10	1 31	21 10	661 73	682 83	.....	182 67
.....	.030	.....	.....	.....	121 74	.....	.....	.....
.....	.024	.....	.....	.....	.....	.....	.....	.....
.....	.016	.....	.....	.....	.....	.....	.....	.....
78	.180	89	78	40 60	582 21	622 81	80 73	
63	.090	63	80	235 78	374 72	610 50	.....	82 72
63	.058	63	76	145 45	232 18	177 63	.....	40 66
72	.121	78	55	21 25	353 56	374 81	122 03	.....
72	.121	74	54	20 00	343 47	363 47	132 12	.....
75	.047	75	85	10 00	213 53	223 53	.....	26 00
.....	.028	.....	.....	.....	123 12	.....	.....	.....
.....	.121	.....	.....	.....	.....	.....	.....	.....
70	.073	74	86	52 10	333 74	385 84	.....	48 84
70	.058	74	77	26 00	236 80	262 80	10 36	.....
65	.192	65	56	.....	573 36	573 36	85 43	.....
1 00	.083	1 08	72	127 27	303 33	430 60	147 67	.....
1 00	.080	1 08	72	127 27	303 33	.....	147 67	.....
70	.245	74	56	189 37	734 04	923 41	224 63	.....
70	.358	75	47	451 39	911 23	1,362 62	572 97	.....
1 10	.059	1 20	88	5 00	275 91	280 91	56 80	.....
.....	.058	.....	.....	.....	.....	.....	.....	.....

TABLE No. 8—*Continued.*

CONCRETE WALKS.

Street.	Side.	From.	To.	Width in Feet.	Position.	Length in Feet.
King.	N	Jarvis	George	11½-12½	Next curb. ..	276.9
Ketchum.....	E	Scollard	Davenport ...	6	With curb. ..	336.5
Kendall.	W	Wells	446 ft. 3 in. s..	5	Next curb. ..	456.5
Keele	E	Algonquin	Garden.	5	With curb. ..	650.8
Keele	E	Garden	South limit lot No. 81.	5	With curb. .	350.0
Keele	E	Bloor	400 feet south .	5	With curb. .	400.0
Keele	E	Ridout	400 feet south of Bloor.	5	With curb. ..	407.7
†Lennox	S	Markham . ..	Euclid	5	Next curb...	585.7
†Lyndhurst ...	E	Melgund	1,244 ft. 4 in. s.	5	11 ft. from st. line.	1,258.8
§Laing	E	Queen	Eastern	5	With curb ..	584.8
Lane 1st e. of Yonge.	S	Adelaide	133 ft. south..	5	Next curb ..	165.8
Margueretta...	E	940 ft. n. Bloor	Wallace	4½	Next curb .	529.0
†Markham ...	E	Barton.	300 ft. north ..	5	" ..	317.0
*Markham	E	300 ft. n. Barton	Follis	5	" ..	216.0
Montrose.	E	Harbord	254 ft. 4 in. n.	5	With curb ..	254.2
Mulock	E	Junction Rd...	288 ft. 4 in. n.	4	Pres. position	299.7
†Nina	N	Bathurst	Lyndhurst	5	Next curb ..	1,063.6
Newsham	S	Brock	East end.....	4	With curb ..	308.6
Neepawa	S	Roncesvalles ..	Lynd	5	Next curb ..	262.8
*Pricefield Rd.	N	49 ft. w. Cluny.	207 ft. fur. west	4½	3 ft. from st. line.	205.8
*Queen.	N	McCaul	40 ft. 7 in. east	10ft. 7 in.	Next curb ..	41.5
*Queen east...	S	10½ ft. e. of No. 5211.	100 ft. fur. east	5	" ..	100.0
Queen	S	Power	246 ft. east....	6	" ...	246.0
Rebecca	N	Givens.....	Dundas . ..	4	With curb ..	323.0
Ritchie	E	309 ft. n. Dundas.	225½ ft. fur. n.	5	" ..	230.8
Sylvan	N	137 ft. w. Haveloek.	Dufferin	4½	" ..	610.0
South Drive ..	N	May..	165 ft. east....	4	" ..	175.0
*Sumach	E	Opp. Riverdale Pk.	.....	3	3 ft. from st. line.	442.2
Sutton.....	S	Sackville.....	Blair.	3½	With curb ..	362.6

TABLE No. 8—*Continued.*

CONCRETE WALKS.

City Tender per ft.	Length in miles on a basis of 5 feet wide.	Next lowest tender, per lineal foot.	Actual cost of work included in tender, per lineal ft.	Cost of work not included in tender.	Cost of work included in tender.	Total cost of work exclusive of interest on money.	The difference between the contractor's cost and cost based on contractor's lowest tender.	
							Gain.	Loss.
$ c.		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
18 sq. ft.	.122	.....	10 sq ft	27 05	326 65	353 70	178 66	.....
1 10	.076	1 23	1 12	43 45	379 38	422 83	34 51	.....
67	.086	72	63	5 00	289 70	294 70	16 16	.....
1 10	.123	1 20	77	73 00	522 75	595 75	178 34	.....
1 10	0.66	1 20	78	7 50	284 93	292 43	86 89	.....
1 10	.076	1 20	95	44 00	387 49	431 49	45 44	.....
1 10	0.77	1 20	83	68 00	322 04	410 04	92 21	.....
58	.111	68	74	.....	435 56	435 56	.....	37 28
61	.238	62	66	166 75	834 77	1,001 52	.....	54 32
1 00	.110	79¾	68	29 26	399 36	428 62	185 44	.....
.....	.030	.....	.....	.....	53 11	.....	.....	.....
56	.090	63	50	70 20	259 11	329 31	37 15	.....
62	.060	65	73	6 00	233 36	239 36	.....	27 31
41	.....	.....	.....	.....	184 82	.....	.....	.....
1 12	.048	1 14	1 21	10 00	310 01	320 01	.....	25 31
56	.045	70	.....	.....	.....	.....	.....	.....
.....	.201	.....	.....	.....	.....	.....	.....	.....
98	.047	1 05	78	18 31	229 07	247 38	57 17	.....
70	.051	80	54	.....	143 75	143 75	58 40	.....
.....	.035	.....	.....	.....	226 80	.....	.....	.....
.....	.017	.....	.....	.....	73 67	.....	.....	.....
.....	.019	.....	.....	.....	90 36	.....	.....	.....
84	.057	90	66	11 36	164 42	175 78	56 98	.....
94	.049	95	1 00	4 00	324 49	328 49	.....	15 27
1 10	.144	1 14	74	12 50	172 84	185 34	91 34	.....
98	.104	98	96	17 50	585 86	603 36	12 92	.....
1 00	.027	1 00	97	2 25	174 20	176 75	5 70	.....
.....	.083	.....	.....	.....	347 95	.....	.....	.....
90	.068	95	92	15 13	355 66	370 79	9 32	.....

TABLE No. 8—*Continued.*

CONCRETE WALKS.

Street.	Side.	From.	To.	Width in Feet.	Position.	Length in Feet.
Sutton	N	Regent	Sackville	3½	With curb	182.6
Symington	E	Bloor	Paton Rd.	5	"	835.8
*Salisbury	N	192 ft. 8 in. w. Sackville	Metcalf	2½		201.2
*Sheridan	W	449 ft. s. Moutray.	39 ft. fur. south	4½		39.0
Temperance	S	104 ft. 8 in. w. of Bay.	Sheppard	5	With curb	215.7
Temperance	S	Bay	104 ft. 8 in. w.	5	With curb	104.7
Temperance	N	160 ft. 7 in. w. of Bay.	Sheppard	5	Pres. position	177.7
Trinity Square.	N	195 ft. 5 in. w. of e.s. of e. branch.	105 ft. westerly	4	Pres. position	104.4
*Victor	S	Logan	152 ft. east	4½	Next curb	168.0
Vivian	E	100 ft. south of Gerrard.	East end	3		106.0
Yonge	W	Lawton	Old north City limits.	6	Pres. position	433.0
Yonge	W	Opposite Bay	Side Park	8	Pres. position	326.2
						41,578.6

* Order of Council.
¶ Partly.
‡ Forcott.
§ Scholes.

TABLE No. 8—*Continued.*

CONCRETE WALKS.

City Tender per ft.	Length in miles on a basis of 5 feet wide.	Next lowest tender, per lineal foot.	Actual cost of work included in tender, per lineal ft.	Cost of work not included in tender.	Cost of work included in tender.	Total cost of work exclusive of interest on money.	The difference between the contractor's cost and cost based on contractor's lowest tender.	
							Gain.	Loss.
$ c.		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
90	.024	95	88	6 38	162 34	168 72	11 13	.....
70	.158	80	71	16 05	616 20	782 25	52 38	.....
.....	.020	.....	.....	.....	50 59	.....	.....	.....
.....	.007	.....	....	.....	31 14	.....	.....	.....
1 12	.041	1 15	1 76	.....	366 05	366 05	.....	134 40
1 12	.020	1 25	1 39	132 68	145 68	278 36	.....	28 45
75	.034	75	95	68 75	159 63	228 38	.. ....	34 38
.....	.....	.....	.....	55 18	.....	.....	.....	.....
.....	.029	.....	.....	82 43	.....	.....	.....	.....
.....	.012	.....	.....	42 62	.....	.....	.....	.....
90	.098	1 08	85	18 50	369 51	388 01	98 13	.....
98	.....	.....	.....	.....	268 30	.....	.....	.....
				3,467 42	27,655 13	29,378 65	4,410 99	1,124 91

TABLE No. 9.

ROADWAYS — 1911.

No.	Street.	From.	To.	Class of Pavement.	Width in Feet.
1	Armand	South end	North end	Grading	
2	*Barett	Edna	159 ft. s. Chelsea	Asphalt	24
3	Beatrice	922 ft. n. College.	141 ft. 7 in. north	"	21
4	Dovercourt Rd.	College	Bloor	Bitulithic	24
5	Foster Place	William	East end	Asphalt	21
6	Gilead Place	21 ft. s. of n. s. Eastern.	King	Concrete	Variable.
7	Grandview	Hampton	146 ft. east	Brick Block	21
8	Haine	Bloor	1,000 ft. north.	Grading	40
9	Indian Rd.	Boustead	Bloor	Bitulithic	24
10	*Jane	Bloor	Annette	Grading	20
11	*Juniper	Lee	Bellefair	"	40
12	*Keele	Garden	Wright	"	30
13	Keele	Bloor	Conduit	"	40
14	Lansdowne	Davenport Rd.	St. Clair	"	40
15	Lovatt Place	Sumach	East end	Brick Block	18
16	Lane 1st s. Ashbridge's Bay.	Logan	Morse	"	11.6
17	Lane 1st w. Church	Lombard	77 ft. 6 in. south, thence 298 ft. west.	Concrete	
18	Lane 1st n. College	Robert	Major	"	9
19	Lane 1st w. Dovercourt.	College	165 ft. 5 in. north	"	14
20	Lane 1st w. Francis	Commercial Lane.	Adelaide	"	10
21	Lane 1st s. Gerrard	Parliament	Berkeley	"	14
22	Lane 1st s. Queen	Duncan	Simcoe	Asphalt Block.	18
23	Lane 1st w. Spadina	Harbord	North end	Concrete	7
24	Lane 1st s. Sullivan	Lane 1st w. Beverley.	160.8 ft. west.	"	10
25	*Lane 1st w. Turbinia shed.	Lake	South end	"	17.6
26	Lane 1st e. Yonge	Isabella	Gloucester	"	15
27	Lane 1st e. Yonge	Adelaide	160 ft. south	"	10.5
28	Lane 1st w. Yonge	Yorkville	Yorkville	"	Variable.
29	*Oakmount	Bloor	Conduit	Grading	40
30	Prospect	St. Clair	N. City limits.	"	40
31	Pullan Place	William	West end	Concrete	15
32	Sackville	Queen	Wilton	Asphalt	24
33	Sackville	Wilton	Gerrard	"	24
34	Silver Birch	Queen	Kingston Rd.	Grading	40

TABLE No. 9.

ROADWAYS — 1911.

Length in Feet.	City's Tender.	Next Lowest Tender.	Cost of work not included in Tender.	Actual cost of work included in Tender.	Difference between actual cost and cost based on Contractor's next lowest Tender.	
					Gain.	Loss.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
695.5	1,197 00	1,680 00	.....	1,277 82	402 18	.....
130	.....	.....	.....	1,009 71	.....	.....
141.7	691 00	695 00	.....	656 70	38 30	.....
2,798	20,825 00	21,690 00	12 08	20,016 54	685 54	.....
170	836 00	927 00	.....	924 00	3 23	.....
381	950 00	1,081 00	28 35	849 28	260 07	.....
106	904 00	904 00	37 50	775 69	165 81	.....
1,000	1,694 00	1,935 00	.....	1,173 55	761 45	.....
906	7,542 00	7,800 00	50 00	7,585 68	264 32	.....
3,411.2	.....	.....	.....	4,919 21	.....	.....
533	.....	.....	.....	446 49	.....	.....
990	.....	.....	.....	505 09	.....	.....
1,418.6	3,461 00	3,917 00	.....	3,768 67	146 33	.....
1,837.4	1,591 00	2,522 00	.....	2,843 15	.....	321 15
314.6	1,604 00	1,624 00	140 85	1,725 16	160 85	.....
292.5	949 00	949 00	350 06	889 06	395 33	.....
312.2	694 00	1,050 00	40 63	721 59	352 75	.....
391.8	521 00	575 00	6 75	483 75	97 96	.....
160.5	426 00	455 00	.....	371 97	71 08	.....
180	257 00	257 00	26 00	326 96	.....	43 96
324	885 00	979 00	24 93	848 45	139 21	.....
508	3,878 00	4,333 00	.....	3,049 34	1,283 66	.....
144.9	251 00	295 00	.....	296 37	.....	1 37
160.8	256 00	256 00	116 57	262 71	114 20	.....
138	.....	.....	.....	420 21	.....	.....
336.3	767 00	793 00	42 00	799 87	55 13	.....
106	173 00	173 00	36 06	195 05	14 01	.....
608.4	1,587 00	1,715 00	.....	1,549 35	256 95	.....
1,380	.....	.....	.....	1,710 99	.....	.....
2,000	1,327 00	1,395 00	.....	1,798 67	.....	328 67
121.3	370 00	494 00	16 95	372 39	138 56	.....
1,386	7,185 00	7,500 00	15 12	5,951 59	1,563 53	.....
888	4,355 00	4,555 00	19 60	3,965 49	609 11	.....
2,713.9	1,520 00	2,027 00	248 00	1,652 91	622 59	.....

TABLE No. 9—*Continued.*

ROADWAYS — 1911.

No.	Street.	From.	To.	Class of Pavement.	Width in Feet.
35	Summerhill Gdns.	Summerhill	Summerhill ..	Bitulithic	24
36	Wilton	River	Bridge.....	Asphalt	22
37	Willow	Queen	595 ft. n. Pine.	Grading	30
38	Woodville.....	Conduit	600 ft. south ..	"	40

*Order of Council.

TABLE No. 9—*Continued.*

ROADWAYS — 1911.

Length in Feet.	City's Tender.	Next Lowest Tender.	Cost of work not included in Tender.	Actual cost of work included in Tender.	Difference between actual cost and cost based on Contractor's next lowest Tender.	
					Gain.	Loss.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
997	6,920 00	6,960 00	119 57	6,275 16	794 41	.....
510	3,104 00	3,287 00	628 45	3,981 27	934 18	.....
1,971	520 00	992 00	383 80	1,792 89	.....	417 09
600	1,647 00	4,300 00	.....	2,360 66	1,939 34	.....
31,063.6	78,887 00	88,115 00	2,343 27	88,553 44	12,270 08	1,112 24
					1,112 24	
				Net Gain	11,157 84	

TABLE No. 10.

Concrete Curbs.

Street.	From.	To.	Side.	Length in feet.	Cost per foot.	Actual Cost.	Total Cost.
					cts.	$ c.	$ c.
Cameron	Queen	Cameron Place	East	830.5	.36	298 98	490 30
Cameron	Queen	Cameron Place	West	864.9	.36	311 36	518 96
Cameron Place	Cameron	Vanauley	North	176.7	.36	63 61	106 10
Clendennan	Dundas	58 ft. north	West	58.0	.45	26 10	26 10
Elm	University	Yonge	North	1,689.6	.50	849 69	849 69
Elm	University	Yonge	South	1,671.0	.51	849 69	849 69
Fuller	669 ft. n. of Queen	Pearson	East	463.5	.40	185 40	185 40
Fuller	Marion	Pearson	West	308.9	.40	121 60	121 60
Howard Park	Indian Rd.	Keele	South	981.6	40	392 64	392 64
Lovatt Place	Sumach	East End	South	320.0	.40	128 00	128 00
Nina	Bathurst	Lyndhurst	North	1,077.6	.45	484 92	484 92
Sackville	Wilton	St. David	West	416.7	.32	133 34	133 34
				8,859.0		3,845 33	4,286 74

TABLE No. 11.

WORKS CONSTRUCTED AS LOCAL IMPROVEMENTS FROM 1892 TO 1911 (INCLUSIVE).

Class of Works.	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
Asphalt	9	7	7	4	3	4	14	28	27	25	24	26	33	30	39	76	106	86	71	72
Asphalt Block	....	....	....	....	....	....	....	....	....	....	....	....	1	1	1	4	6	11	2	8
Bitulithic	....	....	....	....	....	....	....	....	....	....	....	....	4	9	18	28	26	33	38	29
Brick	....	....	..	2	6	16	13	23	13	7	11	10	12	8	8	8	11	9	2	....
Gravel Roadway	....	....	....	....	....	16	....	1	1	....	....	....	....	....	....	....	....	....	....	....
Cobble Stone Pavements	5	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Stone Setts	....	....	....	....	....	....	....	....	....	1	....	1	....	1	....	1	....	....	....	1
Macadam Roadways	1	....	1	4	5	3	13	24	14	16	24	14	14	12	4	6	5	2	1	2
Tar Macadam Pavements	....	....	....	....	....	....	....	....	1	1	6	12	8	9	2	2	....	....	....	....
Cedar Block Pavements	20	14	6	7	3	7	19	20	24	12	10	6	3	6	3	1	1	....	....	....
Concrete Pavements	....	....	....	3	....	....	1	....	....	....	1	2	1	2	2	6	8	6	17	18
Scoria Block	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Concrete and Stone Curb	....	....	....	....	....	....	....	....	....	1	3	4	6	15	23	42	93	65	64	79
Wood Curb	....	....	....	....	....	....	....	....	....	3	1	1	....	..	..	....	....	....	....	....
Concrete Walks	6	3	6	11	6	13	25	37	85	118	188	236	247	276	359	428	430	392	428	407
Brick Walks	..	....	....	....	1	8	14	4	1	2	1	....	1	1	1	....	2	....	....	....
Stone Flag Walks	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Grading	....	....	....	....	....	....	....	....	....	....	....	....	2	2	1	2	6	11	9	22
Wood Block	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	4	....	....	1	....
Vitrified Block	....	....	....	....	....	....	....	....	....	....	....	....	....	3	2	13	13	10	7	12
	43	35	20	31	24	67	99	137	167	186	269	312	332	377	463	621	707	625	630	650

N.B.—Track allowance construction and private works done under City supervision not included in table.

TABLE No. 12.

TABLE SHOWING MILEAGE OF PAVEMENTS IN TORONTO, 1911.
(INCLUDING UNPAVED ROADS)

Class.	Old Toronto and Annexes.	Paved Lanes.	Total Length in Feet.	Total Mileage.
Cedar Block	53,355	1,595	54,950	10.41
Asphalt	756,625	1,128	757,753	143.51
Asphalt Block	31,063	508	31,571	5.98
Bitulithic	168.858	.....	168,858	31.98
Macadam	196,595	.....	196,595	37.23
Tar Macadam	10,054	.....	10,054	1.90
Treated Wood Block	3,013	.....	3,013	0 57
Concrete	4,848	15,131	19,979	3.78
Gravel	113,809	.....	113,809	21.56
Brick	137,568	7,895	145.463	27.55
Granite Block	.....	558	558	0.10
Scoria	1,147	750	1,897	0.36
Cobble Stone	.....	2,331	2,331	0.44
Tamarac	351	.....	351	0.07
Stone Setts	6,637	.....	6,637	1.26
Unpaved Roads	685,367	.....	685,367	129.80
Tarvia	9,910	.....	9,910	1.88
Total Lineal Feet	2,179.200	29,896	2,209,096	418.38
Total Mileage	412.72	5.66	418.38	418.38

Wilton Avenue Bridge, Looking West.

Wilton Avenue Bridge, Looking Up Stream.

Bridges and Docks Matters.

GENERAL.

1. During the year, the following bridges have been completed and opened for traffic, viz.:—Queen Street High Level Bridge, Wilton Avenue Steel Arch Bridge, Cibola Avenue Bridge, and Clandeboye Avenue Lift Bridge.

At the date of writing there are two bridges under construction, viz.:—the Weston Road Bridge and the Park Drive Bridge.

In regard to maintenance, special attention has been given to the substructure of all wooden bridges; the superstructure given general repairs where absolutely necessary.

The City wharves have been kept in safe condition and two of them given extensive repairs. Owing to the proposed transfer of all wharves to the newly appointed Harbor Commission, extensive renewals were not taken in hand.

At the Municipal Elections held on January 1st, 1911, a By-law to authorize the construction of a viaduct in a straight line across the Don Valley and Rosedale Ravine from the intersection of Danforth and Broadview Avenues to the intersection of Bloor and Sherbourne Streets, a distance of some 5,000 feet, at a cost of $1,040,000, was defeated by about 1,500 votes.

The Department, realizing that eventually a viaduct would be constructed in this vicinity, made a comprehensive survey and plan of the valleys from Dale Avenue to Winchester Street on the north and south to Broadview Avenue, and Sherbourne Street on the east and west, in order that the several alternative schemes that have been proposed for this viaduct might be given proper consideration.

After a careful analysis of the question, the Department decided to recommend to Council the adoption of the straight line route, and to include the extension of Parliament Street as is shown by route "A.E.D." and "G.E." on Plate No. .... at an estimated cost of:

For Concrete arch construction	$1,412,000 00
Steel trestle construction	844,000 00
Steel arch construction	1,157,000 00

The above are exclusive of land damages.

The width of the viaduct in all cases to be 60 feet with a 44-foot roadway and two 8-foot sidewalks, and designed to carry Street Railway Traffic.

The Assessment Department's estimate of the land damages was $300,000.

Council concurred in the recommendation and a By-law to authorize the expenditure of $1,783,333 for the construction of this viaduct to be built in a series of concrete arches, is to be placed before the Electorate at this year's Election, to be held January 1st, 1912.

The other routes that were considered by the Department are as follows:—

1st. Dale Avenue route, indicated by the letters A.F.H.D., and to include the extension of Parliament Street as indicated by either of the letters G.H. or G.F. The estimated cost, exclusive of land damages, is as follows:—

For Concrete arch construction	$1,371,000 00
Steel trestle construction	828,000 00
Steel arch construction	1,116,000 00

2nd. The route marked A.B.D., which is immediately north of Howard Street and includes the extension of Parliament Street. The estimated cost is as follows:—

For Concrete arch construction	$1,200,000 00
Steel trestle construction	621,000 00
Steel arch construction	889,000 00

3rd. The route marked A.B.G.C., via Howard Street to Sherbourne Street, to include extension of Parliament Street. The estimated cost is as follows:—

For Concrete arch construction	$923,000 00
Steel trestle construction	517,000 00
Steel arch construction	750,000 00

Queen Street Viaduct, Looking West.

Queen Street Viaduct, West Approach, Showing Temporary Tracks.

Queen Street Viaduct, West Approach.

These estimates include only construction cost, no provision having been made for land damages, nor the necessary charges in connection with the issuing of debentures.

QUEEN STREET VIADUCT.

2. Work on the viaduct on Queen Street, crossing over the Don River and the tracks of the Canadian Pacific, Canadian Northern and Grand Trunk Railways, was commenced on October 11th, 1910. The bridge was opened for east and west-bound street railway traffic on Sunday, October 8th, 1911, at 4.30 p.m., vehicular and pedestrian traffic October 13th, 1911.

For general description of bridge, see Engineer's Report, 1910.

WILTON AVENUE STEEL ARCH BRIDGE.

3. Crossing over G. T. R., C. P. R., Canadian Northern and Industrial Railway Tracks and Don River.

Work on the foundation was commenced late in 1909. The bridge was opened for general traffic on August 18th, 1911.

WESTON ROAD VIADUCT.

4. The reconstruction of the old wooden structure was commenced in the Fall of 1910. The contract for the concrete viaduct being let to Contractor E. C. Lewis, and that for the Steel Truss Bridge span over the tracks of the Canadian Pacific Railway Company, to the Canada Foundry Company.

The City rebuilt the old wooden approach on the north side by day labor, with a view to replacing it in future with a concrete viaduct extending over the Grand Trunk tracks to the intersection of Weston Road and Junction Road, thus removing another very dangerous level crossing.

This work was seriously delayed owing to application of the C. P. R. to the Dominion Board of Railway Commissioners for alteration of plans to permit of additional tracks being provided under the structure.

The work of completion has been further delayed by the non-completion of the contract awarded to the Canada Foundry Co. for the supply erection of the steel span. This is now well under way, and the bridge should be open for traffic about the middle of February.

PARK DRIVE BRIDGE.

5. The old wooden structure crossing over the Don River at Park Drive and Bay View Avenue, came into the City by annexation and was in a deplorable condition.

On account of the apparent indefinite location of the Don River at this point, it was considered advisable to build with a temporary structure only—consisting of two 60-foot wooden Queen Truss Spans, with timber approaches. The old bridge has been diverted to handle the traffic and work of renewal will be rushed forward. Approximate estimate $5,000.

MAINTENANCE AND INSPECTION OF BRIDGES.

6. A total of $16,186.96 has been spent on Maintenance and Inspection of Bridges during the yast year, as compared with $10,986.86 expended in 1910, and $9,947.22 in 1909.

All bridges have been thoroughly inspected from time to time throughout the year, and from these inspections, it is, in my opinion, necessary to replace the bridges known as—Cattle Market; Strachan Avenue (2 bridges), Gerrard Street over Don, and Shaw Street, with new structures.

The following work has been done:—

Cherry Street Bridge.—The old wooden swing bridge known as "Lamb's Bridge," crossing over Keating's Channel, has been removed and replaced by the iron swing span, which crossed the Don River on Cherry Street a few hundred feet to the north of Keating's Channel. This necessitated construction of new wooden centre pier, rest piers and abutments.

Bridge Painting.

Dundas Street, Sherbourne Street and Moore Park.—Three bridges hase been cleaned and painted this year; the work was let by contract to the Canadian Sand Blast Co. of Montreal, who cleaned the steel with the sand blast process and then applied two coats of "Esco" black bridge paint. The work was done under the supervision of our Inspector.

Dundas Street Bridges.—Entire new wooden decks were placed on the Dundas Street Highway Bridges, including floor joists and double floor. On account of the condition of the shelf angles, it was found

Weston Road Bridge—Old Steel Span Before Removal.

Weston Road Bridge.

necessary to place the joists on the top flanges of floor beams, which raised the roadway 10½ inches. The Roadway Department altered their approaches to conform with the new elevation.

Gerrard Street, East Coxwell Avenue.—The old wooden trestle on Gerrard Street just east of Coxwell Avenue, was found to be in a very dangerous condition, which necessitated strengthening to safely handle the traffic until replaced by a reinforced concrete box culvert and filled, which was done this Fall, in connection with the new Civic Car Lines.

Gerrard Street over Don.—The top flooring, with the exception of that occupied by the Devil Strip on the Gerrard Street Bridge over the Don River, has been renewed, and the rail joints shimed up where necessary to reduce the impact caused by street cars while crossing over bridge.

Main Street, East Toronto.—The bridge at Main Street, East Toronto, is maintained by the Grand Trunk Railway Company, with exception of sidewalks. This Department made some light repairs to the sidewalks and placed a new one with hand railing on the centre span. The Grand Trunk Railway Co. has been requested to renew the present wooden bents and floor system.

Beech Avenue Bridge.—The bridge which crosses the Ravine at the head of Beech Avenue is an old wooden trestle, and was found to be in a decayed condition. By placing several intermediate bents, it was temporarily strengthened until such time as the work of filling the ravine is completed. Traffic will then be transferred from the bridge to the fill; the old bridge removed and the fill widened to the proper street lines.

Sherbourne Street Bridge.—The 2-in. top floor has been renewed throughout. Up to this year there has been no adequate means of taking care of the surface water from this bridge, and owing to the bridge being in a depression, a large quantity of water gathered quickly. Gratings and catch basins were placed on each side of the roadway at the curbs at the north end of the bridge and connected with box drains leading to the ditch beside the ravine roadway under the bridge. This has had the desired effect.

Glen Road South.—The two-inch plank floor on the bridge has been renewed throughout, and the sidewalks repaired where necessary.

Eastern Avenue Bridge over Don River.—The expansion rollers and nests of this bridge were found to be in a poor condition, caused by rust and corrosion. It was the intention to have them removed and cleaned, but it was found necessary to provide and place a new set, to insure the proper movement of the bridge, while under contraction and expansion.

Shaw Street Bridge.—The sub and superstructures have had general repairs with a view to handling traffic the present year. It is intended to include in the 1912 appropriation estimates an item to cover the cost of a new concrete arch with girder span approaches.

Glen Road Bridge North.—General light repairs were made to this bridge, with a view to renewing the entire deck, including joists and floor, in 1912.

Spadina Road Bridge.—While the deck of this bridge underwent extensive repairs in 1909, it was found upon examination that the underpinning was decayed to a great extent. Each bent, including footings, was overhauled and put in first-class condition.

Strachan Avenue Bridges.—These bridges are of wood and are in very poor condition. Such necessary repairs to insure safety were made this year, consisting of renewal of one truss and repairs to the other trusses and floor. I will include in 1912 appropriation estimates an item to cover the cost of replacing them with our standard class "A" bridges which I consider absolutely necessary.

The following bridges have been given necessary light repairs:

Crawford Street, over Bellwoods Park.
York Street, over C. P. R. and G. T. R. tracks.
Berkeley Street, over Small's Pond.

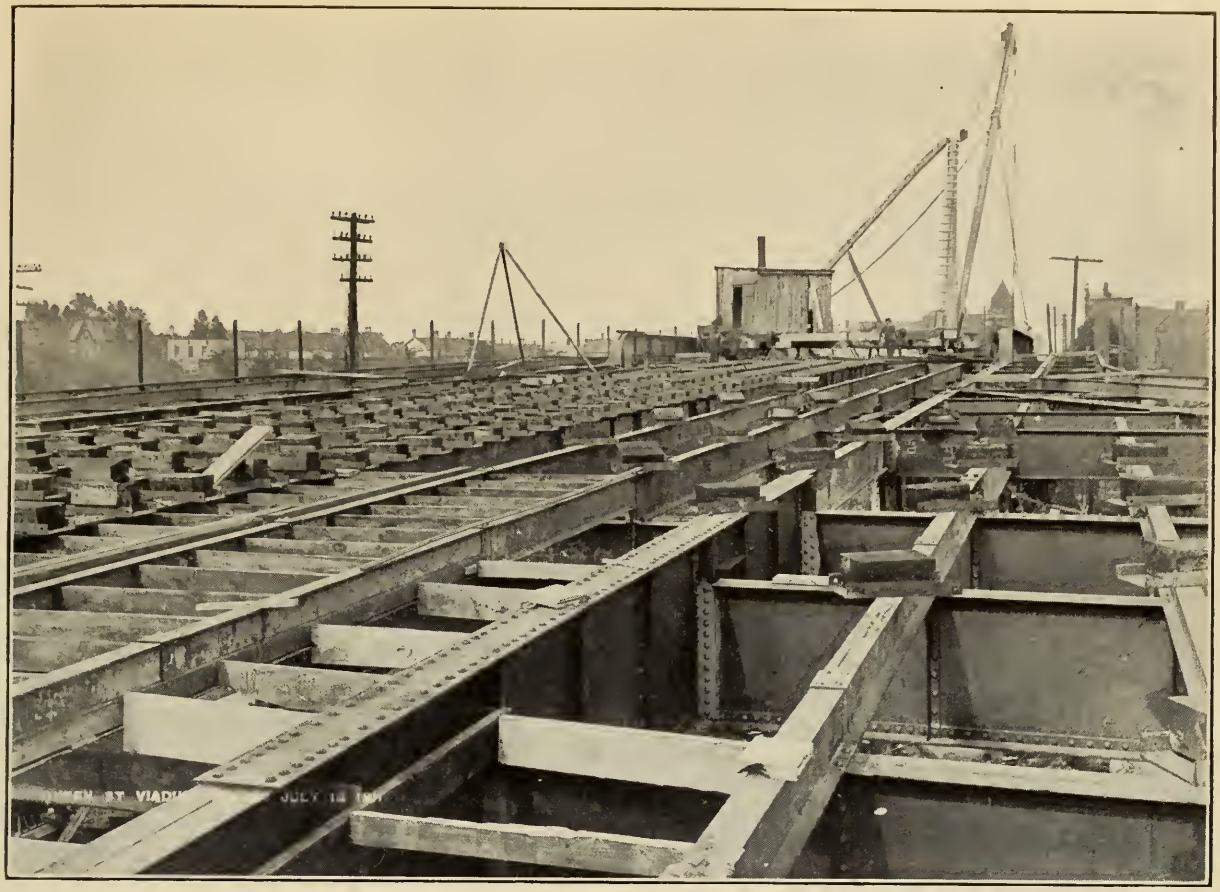
Table No. 111., accompanying this report, gives the detail costs of the above works done on the maintenance appropriation.

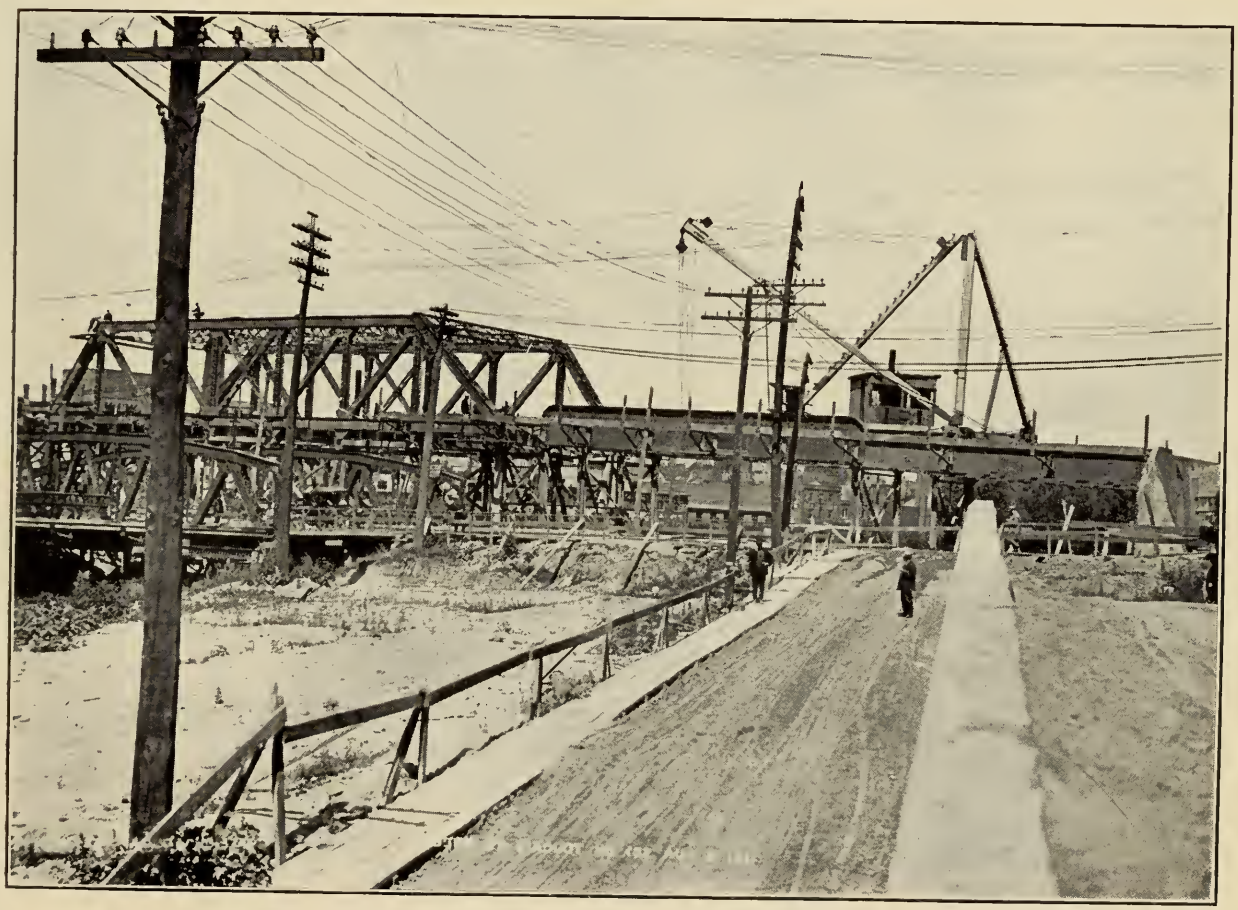
RENEWAL AND MAINTENANCE OF CULVERTS.

The following culverts have been renewed, extended and repaired:

Yonge Street Stone Arch Culvert at Mount Pleasant Cemetery.—Extensive repairs to wingwalls and arch.

Somerset Avenue—At Davenport.—New culvert under roadway, 120 feet of 36-inch corrugated galvanized steel pipe to replace old wooden box.





Queen Street Viaduct—Steel Work During Erection.

Gerrard Street, east of Coxwell Avenue.—New 3-ft. x 4-ft. reinforced concrete box culvert, 175 ft. long, to replace trestle bridge now filled.

Gerrard Street, east of Greenwood Avenue.—(2) culverts. Extension of 40 feet on each side of roadway 3-ft. x 4-ft. concrete arch culvert.

St. Clair Avenue, at Lawton Avenue.—Renewal and extension of 3-ft. x 3-ft. timber. Box culvert 120 feet long, in wood.

Lauder Avenue, at St. Clair.—Renewal and extension of 2-ft. x 3-ft. timber box culvert 50 feet long, in wood.

St. Clair Avenue, at Ossington.—Extension of 75-ft. on north side and 45-ft. on south side of St. Clair Avenue of 3-ft. x 4-ft. concrete arch culvert.

St. Clair Avenue, at Bathurst Street.—Extension of 80 feet on north side and 140 feet on south side of existing St. Clair Avenue, 6-ft. x 6-ft. reinforced concrete box culvert, consequent to civic car lines.

For cost, see table.

CITY WHARF RENEWALS AND REPAIRS.

Inland Lines Navigation Co.'s Wharf.—The condition of this dock was such that it was found necessary to reconstruct it in timber above mean water level.

Canadian Lake Line Navigation Co.'s Wharf.—This wharf was in a similar condition to that of the Inland wharf; two-thirds of it requiring renewal above mean water level, the remaining third being reconstructed in 1910.

R. & O. Nav. Co. Docks.—Light repairs to fender crib and snubbing posts.

Ferry Co. Docks.—Widening ferry slips and general repairs to docks.

Turbinia Dock.—General repairs to floor of dock.

Yonge Street Dock.—General repairs to sidewalks and plank roadways.

Brock Street Dock.—This dock was found to be in a very dilapidated condition, and was given necessary repairs to handle the traffic for the summer.

Table No. V., accompanying this report, gives the details of the costs of these works.

LAVATORIES.

Keele Street.—The new men's lavatory was commenced on October 11th, 1911, and opened to the public on March 6th, 1911. All work, with the exception of tiling, roofing and plumbing, was done by day labor.

For cost, see table.

ISLAND WATER WORKS DONE BY THIS DEPARTMENT.

The body of water at the Island known as Long Pond was converted into a sedimentation basin by sheet pile daming all entrances from the Bay and constructing a 30-ft. cut, 10 feet deep, from Long Pond Lagoon south on Clandeboye Avenue to the lake, which was protected on both sides by wooden sheet piling. The work of excavating was done by teams to lake leved and then by clam shell dredge to required depth. It was found necessary to erect a wooden lift bridge over Clandeboye Avenue, on Lake Shore Road. This bridge has a span of 32 feet, and lifts to clear 35 feet above mean water level. In order to allow the sand pumps and derricks to enter the lagoon from the Bay and to commence the cut, it was necessary to remove the old wooden foot-bridge connecting Island Park and Cibola Avenue, which was later replaced by a new wooden structure.

All work, with the exception of construction of the bridges, which was done by day labor, was done by contractors under the supervision of this Department.

SEA WALL—EXHIBITION.

The work of construction of 510 feet of sea wall, more or less, extending westerly from the present wall at Exhibition Park, was contracted for on the unit price basis, and let to contractor Peter Arnot. Work on this contract was delayed in commencement until late in the fall, therefore the contractor has not accomplished a great deal of actual work on the site of the sea wall, although he has a number of cribs and concrete blocks made at his yard and ready to take to sea wall site in the early spring. Weather conditions govern this work to a very great extent. Engineering and inspection done by this Department.

SHORE PROTECTION—KEW AND BALMY BEACHES.

Two groynes were constructed, one at Beech Avenue, Balmy Beach, extending from and at right angles with the shore into the lake a

Groynes at Kew Beach.

distance of 280 feet; the other at Leuty Avenue, Kew Beach, extending a distance of 233 feet into the lake. These groynes are composed of a brush mattress, which rests on the lake bottom, rock filling being placed on the mattress to a height of 3 feet above mean water level, 8 feet wide on top, the sides sloping away at 1½ inches to 1 foot.

The results to date have been entirely satisfactory; beach being piled up 100 feet into the lake and extending several hundred feet to the east of the groynes.

The contract was let to Mr. John E. Russell, on the unit price basis. Engineering and inspection by this Department.

Expenditure for 1911:

Engineering and Inspection	$425 83
Paid on contract to J. E. Russell.....	8,062 32
	$8,488 15

PRINCESS STREET YARD CRIB WORK.

The old sheet piling enclosing the Roadway Department Store Yard at the foot of Princess Street is in a deplorable condition. It has been decided to replace it with new wooden cribs and concrete retaining walls. The first section of these was built and placed in position by contractor John E. Russell; the cold weather prohibiting the placing of concrete retaining walls until spring, at which time it is hoped that Council will have appropriated sufficient funds to complete the undertaking.

Engineering and inspection done by this Department.

ASHBRIDGE'S BAY DOCKS.

Plans were prepared in this office for the new docks at Ashbridge's Bay, and the contract for this construction was let to Messrs. Miller & Gibson for the sum of $119,900; the City to make the excavations for the berths and all back filling. The plans were figured originally to provide a 20-foot water berth, but on account of exceptions being taken to this by the Board of Harbor Commissioners, the contractor was stopped in his work, and the plans were revised to provide for a 24-foot water berth, as specified by the Harbor Board.

ISLAND MAINTENANCE.

The bridges and docks at the Island were given necessary light repairs.

The Department erected by day labor an open constructed wooden shelter at the corner of Queen Street and Scarboro Beach Park, for the protection of street railway passengers, at a cost of $184.05.

GRADE SEPARATION—PART I.

Alterations were made to the Machinery Hall and Dog Building at the Exhibition Grounds so as to accommodate the Exhibition siding behind the new concrete retaining wall.

The old building belonging to the City, and lately used by a boat building company at Sunnyside, was cut into sections, moved and erected on the south side of Lake Shore Road, opposite Keele Street, to be used as an office and waiting room for the Toronto and York Radial Railway.

The above work was done by day labor.

Respectfully submitted.

E. L. COUSINS,
Asst. Engineer.

TABLE I.

LIST OF BRIDGES, GIVING PRINCIPAL DIMENSIONS.

Bridge.	Location.	Class.	Built.	Type.	Material.			Dimensions				Maintained By.	Clearance.		Remarks.
					Substructure.	Superstructure.	Flooring.	Length.	Width Roadway.	No. Sidewalks.	Width				
								Ft. In.	Ft. In.		Ft. In.		Ft.	In.	
Bathurst St.	Crossing over tracks, G.T.R.	B	1888	Through Truss	Stone Masonry	Steel and Iron	Wood	161 6	18	2	6 1	G.T.R.	22	5½	
Beech Ave.	South of Kingston Road.	B	*	Trestle.	Wood	Wood	Wood	142	16	None.		City	15	6	
Berkeley Ave.	North of Kingston Road.	B	*	Trestle.	Wood	Wood	Wood	133	15 4	2	3	City	15	6	
Cattle Market	Crossing over tracks of G.T.R. and C.P.R.	B	1893	Through Lattice Girder	Stone Masonry	Steel.	Wood	159 6	19 2			City Property Dept.	22	3	Two spans. C.P.R. track gauge line 4 ft. 8½ in. from column.
Cherry St.	Crossing over Keating's Channel	B	1897	Swing	Wood	Steel.	Wood	125	16			City			One swing span. Taken from old Cherry St. crossing over Don in 1911.
Chippewa Ave.	Crossing Channel to R.C.Y.C.	D	1910	Cantilever	Concrete on Piles	Concrete	Concrete	34	Foot bridge		7	City	4	11	Two cantilever arms and suspended span, total length 54 ft. 6 in.
"	Crossing Lagoon.	D	1911	Trestle.	Wood on Piles	Wood	Wood	45	Foot bridge		7 2	City			Three spans. Renewed in 1911.
"	North of Lake Shore.	D	1909	Arch.	Concrete on Piles	Concrete	Concrete	60	Foot bridge		9	City	6	6	Two approach spans, total length 80 ft.
Clandeboye Ave.	Over Clandeboye Avenue cut, Centre Island.	B	1911	Lift	Wood on Piles	Wood	Wood	35	12 6			City			Operated by hand.
Crawford St.	Crossing over Bellwoods Park	B	1884	Trestle.	Wood	Wood	Wood	286 9	18 11	2	4	City	28		Reconstructed in 1908.
Dundas St.	Crossing over tracks, G.T.R.	B	1893	Through Truss	Stone Masonry	Steel.	Wood	83 8	30	1	7	City	21	4½	One span.
"	" " "	C	1909	Through Plate Girder	Concrete	Steel.	Wood	83 8	16 11	1	7	City	22	10½	One span.
"	" " " and C.P.R.	B	1893	Through Truss	Stone Masonry	Steel.	Wood	339	30	1	7	City	20	11½	Four spans.
"	" " "	C	1909	Through Plate Girder	Concrete	Steel.	Wood	339	16 11	1	7	City	23	3½	Four spans.
Eastern Ave.	Crossing over River Don.	B	1900	Through Truss	Concrete on Piles	Steel.	Wood	134 8½	21 6	2	8 7	City	10		One span.
Gerrard St.	" "	A	1889	Through Truss, L.G.A. Spans	Stone Masonry on Piles	Steel.	Wood	121 6	27	2	6 3½	City	22 21	6 0	East Side. West Side.	Gauge line 4 ft. 8 in. from column. Two approach trestles, total length 426 ft. 3 in.
Glen Road	Crossing over Rosedale Valley Road.	B	1887	Deck Plate Girder Trestle	Stone Masonry	Steel.	Wood	364 3	17 1	2	4 6	City	70		(Approx.). Reconstructed 1899. Abutments reconstructed 1910.
"	Crossing over Park Drive.	B		Trestle.	Stone Masonry	Steel.	Wood	699 8	23	2	4 4	City	100		(Approx.). Reconstructed 1902.
Hallam's	Crossing over Long Pond, Centre Island.	D	1893	Arch.	Stone Masonry on Piles	Steel.	Wood	130	22			City	12		Three spans.
Harbord St.	Crossing over Beatrice Street.	A	1909	Arch.	Concrete	Concrete	Filled	34 6	42	2	6	City	23		Two approach spans, total length 120 ft. 6 in.
Huntley St.	Crossing over Rosedale Valley Road.	B	1884	Deck Plate Girder Trestle	Stone Masonry	Steel.	Wood	399 9	20 4	2	4 8	City	80		(Approx.).
John St.	Crossing over tracks of G.T.R. and C.P.R.	B	1895	Through Truss	Stone Masonry	Steel.	Wood	734 1	29 10	2	6	G.T.R. and C.P.R.	21	10½	Six spans.
Lake Shore Road	Crossing over Humber River	B	1900	Through Truss	Concrete	Steel.	Wood	161	21 5	1	6	City	12		One span.
Main St.	Crossing over G.T.R. tracks, East Toronto.	B	*	T.P.G. Trestle Approaches	Wood	Steel and Wood	Wood	55	21 6½	1	2 10	G.T.R.	21	8	Two approach trestles, total length 204 ft. Gauge line 5 ft. 3½ in. from bent.
Park Drive	Crossing over River Don	B		Through Truss	Wood	Wood	Wood	134 9	12	2	2	City	12		Three spans and two approach trestles, total length 184 ft. 8 in.
Queen St.	Crossing over River Don, C.N.O., C.P.R., G.T.R., and Civic Railway tracks.	A	1910	Through Truss P.G. Approaches	Concrete on Piles	Steel.	Concrete	124 3½	42	2	9	City and Railways	22 32	6 7	Tracks Water	Approach trestles, walls and fill, 1,303 ft.
Riverdale Park	Crossing over Don River	D	1908	Through Truss	Wood on Piles	Steel.	Wood	127 4½	Foot bridge		10 1½	City	12	1	One span.
Roxborough St.	East of Park Drive	B	1894	Trestle.	Wood	Wood	Wood	99 4	17			City	20		
St. Clair Ave.	Crossing Moore Park	B	*	Deck Plate Girder Trestle	Stone Masonry	Steel.	Wood	353 6	17 6	2	5 7	City and Township.	75		(Approx.).
Shaw St.	Crossing over Sully Crescent.	B	1885	Trestle.	Wood	Wood	Wood	323 6	20 1	2	4	City	23	4	
Sherbourne St.	Crossing over Rosedale Valley Road.	A	1890	Lattice Girder Trestle.	Stone Masonry	Steel.	Wood	440 8½	30 6½	2	5 9	City	90		(Approx.).
Spadina Ave.	Crossing over tracks G.T.R. and C.P.R.	B		Through Truss	Stone Masonry	Steel.	Wood	166 6	18 9	2	6	G.T.R. and C.P.R.	23	4	One span, over main passenger and freight siding.
Spadina Road.	Crossing Russell Hill Drive.	B	1909	Trestle.	Wood	Wood	Wood	270	16	2	4 2	City	34		Six spans. Superstructure reconstructed 1909.
Strachan Ave., n.	Crossing over tracks of G.T.R.	B	1878	Through Truss	Wood	Wood	Wood	119 5	19 2½	2	5	City	19	6	
" s.	Crossing over tracks of C.P.R.	B		Through Truss	Wood	Wood	Wood	110 9	19 4	2	5	City	18		
Summerhill Ave.	Crossing Moore Park	B	*	Through Truss	Wood	Wood	Wood	53 2½	13 1			City	20		(Approx.). Two approach trestles, total length 96 ft. 6 in.
Wallace Ave.	Crossing over tracks of G.T.R. and C.P.R.	D	1908	Through Truss	Concrete	Steel.	Wood	199	Foot bridge		9 6	City	22	7½	Three spans approached by steps.
Weston Road.	" " C.P.R.	B	1900	Through Truss, Wood Trestle and Concrete Approaches.	Steel and Wood Concrete	Wood	Wood and Concrete	107	30	2	6	City	22	6	Wood approach at north. Concrete approach at south.
Wilton Ave.	Crossing over G.T.R., C.P.R., C.N.O. and the River Don.	A	1909	Arch, D.P.G. Approaches	Concrete on Piles	Steel.	Concrete	120	42	2	6 3	City	23 23 33	2 4½ 8	E. side track W. side track Over water	Five spans, total length 376 feet.
Winchester St.	Crossing over River Don.	B	1909	Through Truss	Wood Cribs.	Wood	Wood	155 3	18 9½	1	4 5½	City	8	11	Three spans. Superstructure reconstructed 1909.
York St.	Crossing over G.T.R., C.P.R. and Union Station tracks.	A	1897	Deck Plate Girder Trestle	Stone Masonry	Steel.	Wood		37 6	2	7 6	City and Railways	22	6	Total length to beginning of curve 803 ft. 3 in.

* This bridge constructed by County, Township, etc., before annexation with the City.

NOTE.—Where a bridge crosses more than one track minimum clearance only is shown.

TABLE No. 2.

LIST OF SUBWAYS, GIVING PRINCIPAL DIMENSIONS.

Subway.	Material.		Dimensions of Under Roadway.				Maintained by.	Clearance.	Dimensions of Bridge.		Remarks.	
	Substructure.	Superstructure.	Length.	Width of Roadway	Sidewalk.	Width of Sidewalk.			Length	Width.		
			ft. ins.	ft. ins.		ft. ins.		ft. ins.	ft. ins.	ft. ins.		
King Street:												
East Bridge	Stone masonry	Steel	579 6	50 3	2	8	G. T. R. and C. P. R	13 6	173	124	8 Tracks.	5 foot piers in centre of roadway.
West Bridge	Stone masonry	Steel					Substructure by City.	13 8½	129	17 6	1 Track.	
Queen Street:												
East Bridge	Stone masonry	Steel					G. T. R. and C. P. R	14 5	87 7	13 7	1 Track.	
Centre Bridge	Stone masonry	Steel	215	46 2	2	10	Substructure by City.	15 3	87 7	28	2 Tracks.	3 T. P. Girders.
West Bridge	Stone masonry	Steel						15	87 7	27	2 Tracks.	3 T. P. Girders.
Lansdowne Avenue:												
North Bridge	Concrete	Steel					G. T. R. and C. P. R	13 11	74 6	36	2 Tracks.	3 T. P. Girders.
Second Bridge	Concrete	Steel	235	24	2	5	City to pay full cost	14	74 6	14	1 Track.	
Third Bridge	Concrete	Steel						13 11	74 6	28 6	2 Tracks.	3 T. P. Girders.
South Bridge	Concrete	Steel						13 10	74 6	36	3 Tracks	4 T. P. Girders.
Gerrard Street	Stone masonry	Steel	31 7	41 8	1	5 9	G. T. R.	14 9	74 2	25 1	2 Tracks.	
Keele Street	Stone masonry	Steel	77	38	1	10	C. P. R.	14 2½	60	77	6 Tracks.	
Elizabeth Street (Runnymede Rd.)	Concrete	Steel	423	37	2	9 6	C. P. R.	14	86 9	60	6 Tracks.	Piers in centre of roadway.

TABLE No. 3.

BRIDGE MAINTENANCE, 1911.

Name.	Work.	Labor.	Lumber.	Paint, Oil.	Sundries.	Totals.
		$ c.	$ c.	$ c.	$ c.	$ c.
Berkeley St.	Painting fence	24 75		10 00		34 75
Beach Ave.	Strengthening	99 23	38 72			137 95
Crawford St.	Repair to floor and sidewalks	19 57	33 12			52 69
Dundas St.	Renewal of deck	1,603 65	2,338 22		47 58	3,989 45
Dundas St.	Flooring between rails of Street Railway	28 52				28 52
Eastern Ave.	Renewal of expansion rollers	100 37			55 17	155 54
Gerrard and Coxwell	Strengthening	83 26				83 26
Gerrard over Don	Placing drain conductor pipes	46 06			17 38	53 44
Gerrard over Don	Renewal of top floor	335 40	650 50		11 45	997 35
Glen Rd. (north)	Repairs to deck	177 13	220 71		2 00	399 84
Glen Rd. (south)	Renewal of top floor	244 40	490 16		11 45	746 01
Main St., East Toronto	Sidewalks (new) on steel span	40 88				40 88
Park Drive	Strengthening	121 18	201 88			323 06
Sherbourne St.	Renewal of top floor	605 24	784 61		53 03	1,442 88
Shaw Street	General repairs to sub- and superstructure	247 24	28 14	44 00		319 38
Spadina Rd.	General repairs to substructure	629 81	104 66		48 93	783 40
Strachan Ave.	General repairs	200 50	170 76		20 05	391 31
York St.	Repairs to sidewalks	138 23	169 09		4 58	311 90
Cherry St. Swing Bridge	Tenders, wages and repairs	392 00	9 39		121 66	523 05
Miscellaneous labor and inspection		1,596 46	13 50		1,284 40	2,894 36
Moore Park	Bridge painting	163 13		765 00	6 08	934 21
Dundas St.	Bridge painting	83 04		1,275 00	13 58	1,371 62
Sherbourne St.	Bridge painting	156 03			6 08	162 11
		7,136 08	5,253 46	2,094 00	1,703 42	16,186 96

NOTE.—Amount shown under heading "Paint" on last three items is the amount paid under contract to the Canadian Sand Blast Co., and represents labor and material.

TABLE No. 4.

MAINTENANCE—ISLAND BRIDGES, 1911.

Name.	Work.	Labor.	Lumber.	Piling.	Concrete.	Sundries.	Credit.	Total.
		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Chippewa Avenue						12 00		12 00
Turner's Bath		237 25				6 24		243 49
Turner's Bath						11 80		11 80
		237 25				30 04		267 29

TABLE No. 5.

MAINTENANCE—CITY DOCKS AND WHARFS, 1911.

Name.	Work.	Labor.	Lumber.	Piling.	Concrete.	Sundries.	Credit.	Totals.
		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Brock Street		115 31	165 60					280 00
Can. Lake Line		813 17	1,392 79			38 14		2,244 10
Ferry Docks		281 67	144 29					425 96
Inland Lines		1,468 99	3,043 32			142 40		4,654 71
Inland Lines		22 33	26 43					48 76
Miscellaneous		245 50				1,056 25		1,301 75
R. & O. Nav. Co		80 38	22 67			5 04		108 09
Turbinia Dock		48 56	136 05					184 61
Yonge Street		83 98	220 45			4 58		309 01
		3,159 89	5,151 60			1,246 41		9,557 90

TABLE No. 6.

MAINTENANCE—ISLAND DOCKS, 1911.

Ward's Island		4 46	13 47			5 00		22 93

TABLE No. 7.

DETAILS OF OPERATION OF CHERRY ST. SWING BRIDGE.

Period.	Number of times opened.	Daily Record.		
		Average.	Maximum.	Minimum.
Week ending April 18	7	1.	2	..
" " 25	19	2.71	3	1
" May 2	21	3.	3	1
" " 9	25	3.58	4	2
" " 16	31	4.42	4	3
" " 23	34	4.85	5	2
" " 30	25	3.58	3	2
" June 6	33	4.71	5	3
" " 13	26	3.71	4	1
" " 20	24	3.45	3	2
" " 27	36	5.14	11	2
" July 4	5	0.71	3	2
" " 11	26	3.71	10	3
" " 18	27	3.85	6	2
" " 25	31	4.42	11	2
" Aug. 1	34	4.85	12	2
" " 8	24	3.45	8	4
" " 17	31	4.42	9	4
" " 24	33	4.71	8	3
" " 31	36	5.14	9	3
" Sept. 7	36	5.14	10	3
" " 14	35	5.	10	3
" " 21	33	4.71	8	3
" " 28	25	3.58	6	2
" Oct. 5	12	1.71	4	1
" " 12	13	1.85	5	1
" " 19	10	1.42	4	1
" " 26	9	1.28	3	1
" Nov. 2	6	0.85	3	1
" " 9	6	0.85	3	1
" " 16	7	1.	3	1
" " 23	7	1.	2	1
" " 30	5	0.71	2	1

Tenders' wages	$392 00
Repairs	131 05
Total	$523 05

TABLE No. 8.

Culverts.

Renewal and Maintenance.

Name.	Labor.	Lumber.	Concrete.	Pipe.	Sundries.	Bolts.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Yonge St. at Mount Pleasant Cemetery.	89 16	.....	.....	.....	22 00	.....	111 16
Miscellaneous	50 00	.....	.....	.....	.....	.....	50 00
							161 16

TABLE No. 9.

Trestles and Culverts Consequent to Civic Car Lines.

Name.	Labor.	Drift Bolts.	Lumber.	Nails.	Wire.	Store Issues and Sundries.	Tools.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Spadina Road Trestles	1,529 34	148 44	3,921 38	35 25	1 76	167 63	32 85	5,836 65

Name.	Labor.	Lumber.	Concrete.	Pipe.	Sundries.	Bolts.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Gerrard St. East, Nos. 1 and 2..	614 72	51 07	433 78	.....	2 44	.....	1,102 01
Ashdale Avenue Culvert	33 45	.....	.....	76 08	.....	.....	109 53
Golf Grounds Culvert.....	513 47	73 63	817 48	....	24 71	.. ..	1,429 29
Ossington Avenue Culvert	505 68	229 65	428 85	.....	6 08	4 95	945 36
Spadina Culvert	1,639 59	150 72	1,845 95	.....	31 00	.....	3,667 26
Lauder Avenue Culvert.....	112 36	235 85	.....	....	.....	13 59	361 80
							7,615 25

Railways and Bridges.

CITY ENGINEER'S DEPARTMENT,
Toronto, December 31st, 1911.

Mr. C. H. Rust, City Engineer, Toronto:

DEAR SIR,—I herewith submit the Annual Report of the Railways and Bridges Branch of this Department for the year ending December 31st, 1911.

This branch is an amalgamation of the branches of Railways and Special Works and Bridges and Docks, and was created as a result of the resignation of Mr. R E. Chadwick, Assistant Engineer in charge of the last named branch.

Under its jurisdiction come all matters relating to—

1st. Steam and electric railways (except the maintenance and extension of the tracks of the Toronto Railway Company, which come under the jurisdiction of the Roadway Branch) effecting the interests of the City.

2nd. The construction and maintenance of all City bridges and docks.

This Department had also charge of the maintenance of the public lavatories, jurisdiction over the location of the overhead and underground lines of the various public utility companies, and was responsible for the tabulation of the Toronto Railway track mileage, on which their mileage tax payment is based.

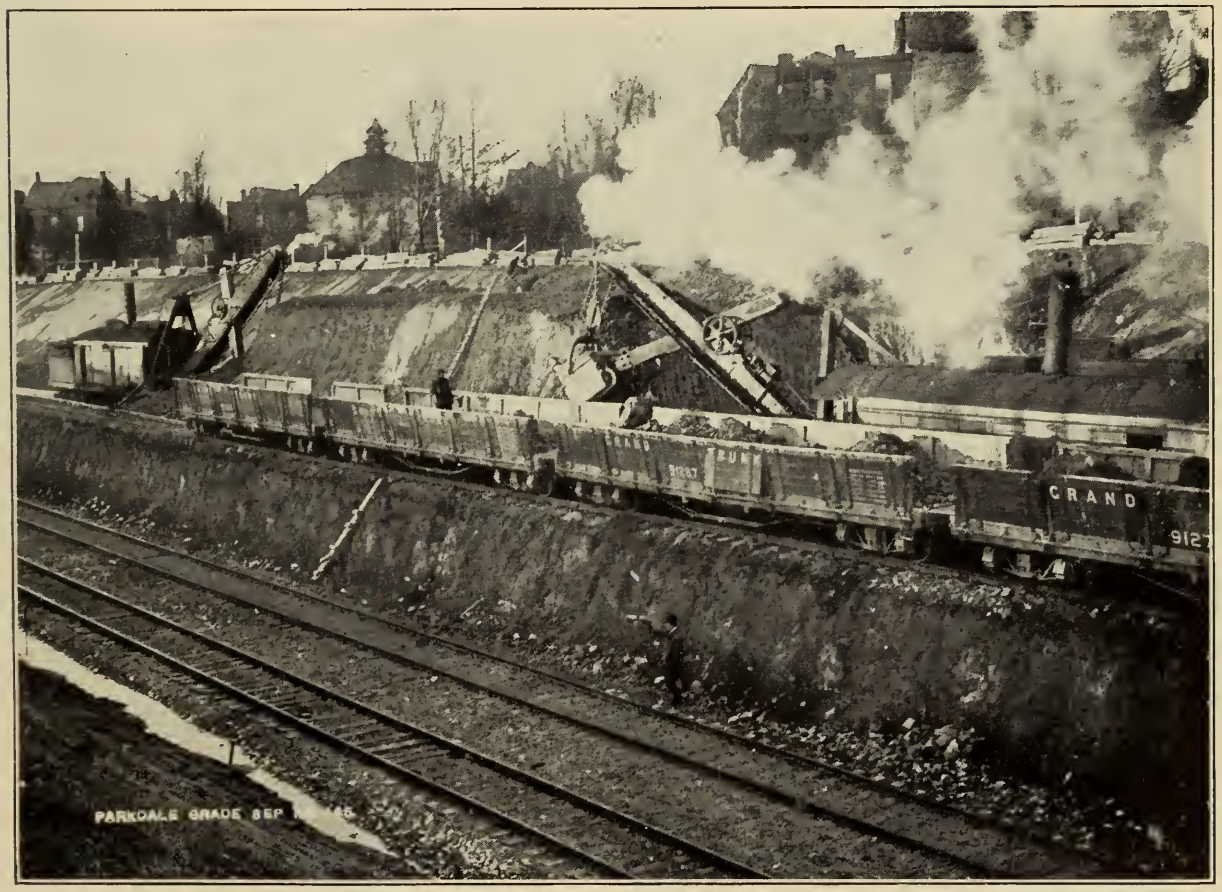
On August 15th the maintenance of the public lavatories was turned over to the Property Commissioner, while the jurisdiction over the location of the public utility lines and the tabulation of the Toronto Railway track mileage was transferred to the Roadway Department, during the month of October.

RAILWAY MATTERS.

GENERAL—STEAM RAILWAY MATTERS.

Of greatest importance to the City of Toronto was the dismissal before the Privy Council in England of the appeal of the Canadian

Shovel Cut, East from Dufferin Street.



Steam Shovel Between Dowling and Wilson Avenues.

Toronto Grade Separation, Part 1.

Pacific Railway against the Order (No. 7200) of the Board of Railway Commissioners for Canada, to compel the Canadian Pacific Railway and Grand Trunk Railway to elevate their tracks and also all grade crossings along the water front between Strachan and Logan Avenues. As a direct result, the Board, on April 25th, issued a further Order giving the railways until August, 1913, to complete the work.

The construction work on Grade Separation, Part I., i.e., the separation of grades between Strachan Avenue and Mimico is well under way. Trains are now operating on the new grade, and the level crossings have all been eliminated with the exception of Queen Street (Sunnyside crossing).

The Canadian Northern Railway are contemplating the construction of a line across the north section of the City and parallel to the Canadian Pacific Railway, North Toronto Branch. The Railway Board have ordered these two railway companies to get together and submit to the Board a joint plan for separation of grades.

Subways are under construction on Brock Avenue, underneath the tracks of the Grand Trunk Railway and Canadian Pacific Railway, and at Elizabeth Street, underneath the tracks of the Canadian Pacific Railway. The Queen Street and Wilton Avenue high level bridges across the tracks of the railway companies on the banks of the Don have been opened for traffic, and the renewal of the Dundas Street bridges over the tracks of the Grand Trunk Railway and Canadian Pacific Railway has been completed, while the reconstruction of the Weston Road viaduct is well under way. Permission has been given to the City by the Board of Railway Commissioners to build a subway at Coxwell Avenue underneath the tracks of the Grand Trunk Railway. Application has been made to the Board for a subway underneath the tracks of the Grand Trunk Railway and Canadian Pacific Railway on Bloor Street, between Lansdowne Avenue and Dundas Street. Gate protection has been ordered by the Railway Commissioners at the Northern Division crossing of the Grand Trunk Railway over Royce Avenue, and at the crossing of that Company's freight terminal tracks over John Street. The cost of protection at Royce Avenue to be borne by the City, and at John Street by the Grand Trunk. In addition, application has been made for gate protection at Lansdowne Avenue and Dovercourt Road, while the Board of Railway Commissioners have themselves raised the question of protection at Osler Avenue; all of these crossings being on the Canadian Pacific North Toronto Branch.

The number of main line railway street crossings, and the manner of their protection, is as follows:

Crossings.	*Number.*	*Percentage of Total.*
Protected by subways	8	8.25
" overhead bridges	16	16.5
" gates and watchmen	23	23.71
" watchmen only	6	6.19
" bells only	5	5.15
Unprotected	39	40.2
Total	97	100%

The City's Industrial Track, on the east bank of the Don, has been turned over to the Canadian Pacific Railway for operation, as far south as Queen Street.

A brick station has been built by the Canadian Pacific Railway at Royce Avenue and Dundas Street to replace the old wooden structure near the Weston Road viaduct. That Company have also established a freight yard and shed at the south-east corner of Bloor and Dundas Streets. Their application for freight terminals on the Government House property, at the corner of King and Simcoe Streets, has been granted by the Railway Commission.

The Canadian Northern Railway have opened their Toronto-Ottawa line as far east as Trenton.

GENERAL—ELECTRIC RAILWAY MATTERS.

Because of the activities of the Department, the Toronto Railway Company were compelled early in February to withdraw their "Pay-as-you-enter" system, which they had inaugurated in November, 1910, without the proper facilities for the handling of the traffic on and off the cars.

Application has also been made to the Ontario Railway and Municipal Board for relief from the overcrowding of the cars, and for the elimination of stub lines, and for a universal transfer system. The Railway Company have been ordered to give the transfers, to continue their Queen cars up Roncesvalles Avenue to Dundas Street, and all their Dundas Street cars to Keele Street. The matter of the overcrowding is still in abeyance.

A report has been made on the feasibility of constructing an underground subway and surface lines as a solution for rapid transit, and in

Trestle Track, West from High Park Entrance.

Shovel Cut, East from Dowling Avenue.

Toronto Grade Separation, Part 1.

this connection tenders have been received to cover the cost of constructing a tube line from Front Street to St. Clair Avenue, via Bay, Teraulay and Yonge Streets. At this coming New Year's election the ratepayers are being asked to state as to whether or not they are in favor of construction of subways for underground railways. Council have also considered the question of acquiring at once the Toronto Street Railway System, but as yet nothing definite has been done.

The franchise granted by the City to the Toronto and York Radial Railway to maintain tracks and operate its cars over that portion of the Lake Shore Road, between Sunnyside and the Humber River, has expired, and arrangements are being made by the City to take over this portion of their line.

Early in the year the Toronto and York Radial Railway made application to the Ontario Railway and Municipal Board for permission to divert its tracks from off Yonge Street at a point 125 feet west of Yonge Street, while four tracks are to be constructed across Wickson Avenue. All these crossings are to be at grade. This application was made because of the fact that their existing terminal alongside the Canadian Pacific Railway would be made useless by the construction of the subway on Yonge Street underneath the tracks of the Canadian Pacific Railway, and the proposed tracks of the Canadian Northern Railway. The Board refused to grant the application, and were of the opinion that some means should be provided for, by which these streets would not be crossed at grade. The City therefore prepared a plan which provided for putting these tracks underground from the terminals at Birch Avenue to a point immediately south of the Grand Trunk Railway Belt Line near Mount Pleasant Cemetery. The Board were of opinion that this proposition of the City's was too expensive, and ordered their engineer, Mr. Wyse, to go into the question and make a report to them as to what he considered would be the best arrangement to all parties concerned.

GRADE SEPARATION—PART I.

Toronto Grade Separation, Part I., embraces that part of the work on the 16th District of the Grand Trunk Railway between Strachan Avenue and New Toronto Station, as per Order No. 10169 of Railway Commissioners for Canada, dated December 8th, 1909.

It consists of the separation of all grade crossings between the above-named points. Work was commenced in September, 1910, and

the work done during that year is described in the 1910 Report of the City Engineer.

To provide for the necessary right of way for a four-track cut and temporary main lines, it was necessary to purchase property both north and south of the old right of way. The expenditure to date on property with the usual legal fees and commissions, within the City limits, has been $411,375.72. Of the houses bought, 15 were wrecked and 3 moved, while the remainder have been rented by the Grand Trunk.

Temporary main lines were laid along the north slope line between Strachan Avenue and Sunnyside, and all traffic was kept on these until September 23rd, when a double track was opened through the cut on approximately the final grade and alignment.

West of Sunnyside traffic was maintained on two tracks immediately north of a trestle track erected for filling purposes.

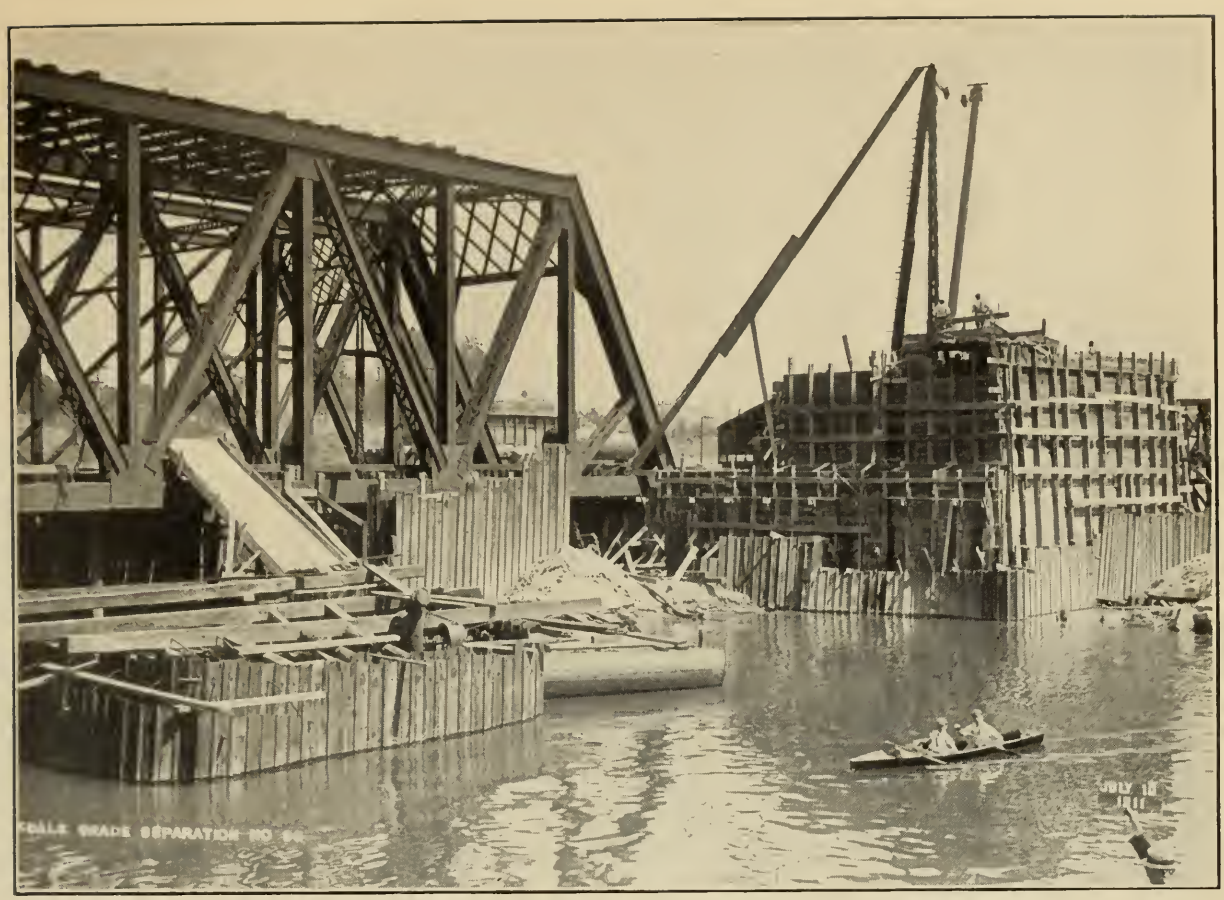
On August 27th, east-bound traffic commenced running on the new elevation between the Humber and Sunnyside, while the final west-bound main line was opened on September 19th.

Steam shovel No. 743 commenced work for the season at a point near Wilson Aenue, cutting east, on April 3rd. Shovel No. 625 was digging gravel at York from April 1st to May 14th, when it commenced near Strachan Avenue, working west. A small shovel, No. 303, worked in the York pits from July 10th to July 24th, when it was moved to work other than Toronto Grade Separation. Shovel No. 619 commenced work near Wilson Avenue on July 12th.

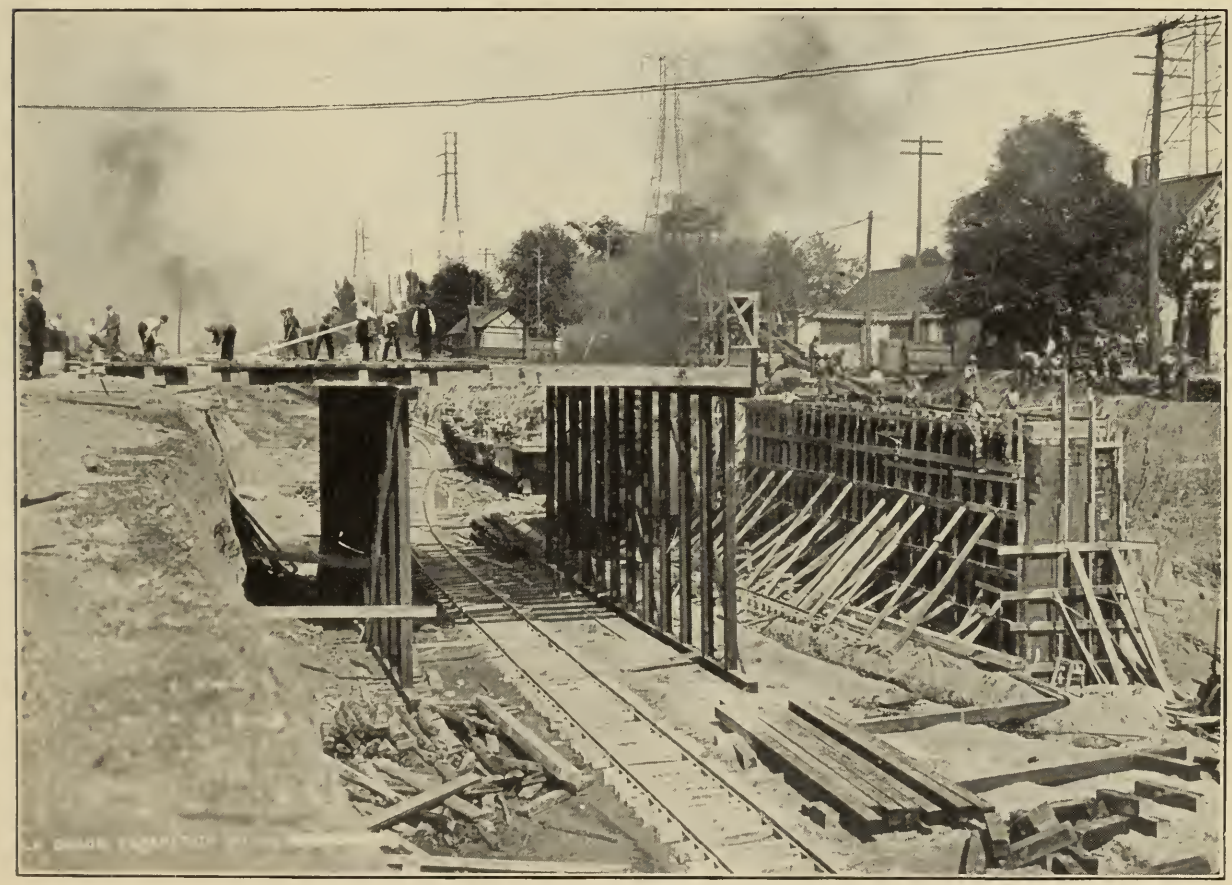
A summary showing the performance of each shovel from the beginning of the work to December 31st, 1911, follows:

Shovel.	Labor.	Shovel Charges.	Cub. Yds. Excavated.	Hours Worked.	Hours Delay.
303	477.08	178.95	5,680	135½	46½
625	10,153.44	2,921.92	145,466	1,929¾	681¼
743	14,013.37	3,960.63	206,658	2,070¼	609¾
619	6,743.90	1,687.92	94,700	1,165¾	470¼
Totals.	31,377.79	8,749.42	451,504	5,301¼	1,827¾

This table shows a cost of $40,127.41 for 451,504 cubic yards, exclusive of locomotive rental, unloading charges and the necessary crews, or 8.8 cents per cubic yard.



Centre Pier and East Abutment, Humber River Bridge.



Dufferin Street Temporary Bridge.

Toronto Grade Separation, Part 1.

The cut has been completed between Dufferin Street and Strachan Avenue, and about 40,000 yards are yet to be excavated between Dufferin Street and Wilson Avenue north of the centre line.

The fill within the City limits has been completed, with the exception of that part at Sunnyside where it will extend south on the Lake Shore Road.

A concrete retaining wall, 1,300 feet in length, varying in height from 15 to 26 feet, has been completed on the south right of way east from Dufferin Street, and a wall on the north side of the Lake Shore Road was completed in 1910.

The south abutments for the bridges at Dufferin Street, Dunn, Jameson and Dowling Avenues, and the north abutment at Dufferin Street have been completed. The Howard Avenue subway is finished, except for the concrete flooring and painting. Girders for the north track at the Keele Street subway were placed on December 10th, and those for the west-bound freight track on December 18th. The remainder of the steel and the south half of the abutments cannot be laid until the Lake Shore Road has been moved south, when the new Sunnyside bridge approach has been completed.

The original Order of the Railway Commission contained a clause providing for the construction of a subway at the Queen Street (Sunnyside) crossing. On September 22nd this clause was cancelled by Order No. 14866, which provides for an overhead bridge to run diagonally across the tracks from the intersection of Roncesvalles Avenue and King Street to the Lake Shore Road.

In this connection it was necessary to purchase the boat-house and restaurant properties of Messrs. Dean & Maw, Devine and Mrs. Meyers, to make the run-off from the bridge level to that of the Lake Shore Road.

Traffic has been maintained at the various street crossings, except for the periods as given below, by means of temporary wooden bridges.

Dunn Ave. closed week of June 22nd.
" " July 10th to 14th.
" " July 29th to August 4th.
" " August 10th to September 1st.
" " October 21st to November 7th.
Dowling Ave. closed April 27th to May 3rd.
" " June 1st to June 9th.
" " August 7th to August 10th.

Dowling Ave. closed September 22nd, 8 hours.
" " Nov. 9th to Nov. 24th (open for pedestrians.)
" " December 20th to December 21st.
Jameson Ave. closed June 12th to October 21st.
Dufferin St. closed June 15th to August 11th (pedestrians);
" 18th (vehicles).
" " November 7th to December 6th.

On account of the large amount of traffic over Dufferin Street crossing, Fort Rouille Street was opened from June 26th to July 27th, and Tyndall Avenue from July 28th to September 11th.

Owing to the cut through South Parkdale, it was necessary to make several alterations to the sewer, gas and water mains. Sewer syphons have been constructed at Wilson Avenue, Close Avenue and Dufferin Street, while the Dowling Avenue sewer has been cut off on the north side of the tracks and diverted along Springhurst to the syphon at Close Avenue.

All water mains between Fraser and Wilson Avenues have been temporarily cut off at the tracks, the services south of the Grand Trunk being supplied by the Strachan Avenue main.

The gas mains have also been cut, that portion south of the tracks being fed by a temporary overhead main at Dunn Avenue and a main laid across Dufferin Street bridge.

According to the Order of the Board of Railway Commissioners for Canada, the Grand Trunk has supplied copies of all requisitions, vouchers, pay rolls, etc., with their monthly bills to the City, these requisitions, etc., being filed at the office of the City Engineer on Dowling Avenue. Bills from the beginning of the work to the end of December, 1911, have been received and checked. Attached is a statement showing the City's share, which has been agreed upon as 24.4 per cent. of the cost of the work within the City limits. (This percentage is subject to readjustment on completion of the work.)

The amount spent by the City in connection with sewers, water mains, etc., to the end of December, 1911, is $65,518.97, of which the Grand Trunk Railway's share is 75.6 per cent., or $49,532.34. A statement showing the City's share of the cost of the work done by the Grand Trunk Railway is attached.

STATEMENT SHOWING CITY'S SHARE OF THE COST OF TORONTO GRADE SEPARATION, PART 1, TO DECEMBER 31ST, 1911.

Year.	Month.	Engineering.	Property.	3% of Total for Accounting	Labor.	Material.	Plant.	Legal Fees not on Property.	Totals.
		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1910....	August.....	839 02	53,636 45	1,637 83	.....	.....	.....	119 00	56,232 30
	September	199 55	19,086 52	598 19	425 35	124 12	402 02	.....	20,537 75
	October	194 38	37,261 59	1,222 50	1,322 65	910 63	1,060 79	.....	41,972 54
	November	179 45	1,909 00	207 45	1,303 21	2,460 02	1,063 65	....	7.122 78
	December	166 81	1,652 39	273 95	1,226 35	2,153 00	3,933 04	....	9.405 54
1911....	January	158 02	5,624 08	266 47	963 94	947 49	1,188 75	.....	9,148 75
	February	133 88	5,057 47	205 56	745 00	648 12	267 40	.....	7,057 43
	March	141 03	2,613 65	172 93	1,356 03	1,583 46	70 21	.....	5,937 31
	April	141 40	1,257 59	219 96	3,051 19	1,073 05	1,808 68	....	7,551 87
	May	125 26	4,365 80	486 91	4,408 72	5,094 43	2.236 23	. .....	16,717 35
	June	136 26	....	286 37	4,106 99	2,750 21	2,552 30	....	9.832 13
	July	158 12	1,365 08	396 05	4,939 05	3.956 76	2,782 75	....	13,597 81
	August..... ...	173 55	....	471 47	7,387 02	6,958 82	1,196 28	....	16,187 14
	September	163 79	355 23	532 04	6,765 43	7,712 36	2,737 86	.....	18,266 71
	October	126 43	....	312 44	5,547 42	2,278 86	2.461 90	.....	10,727 05
	November	136 68	2,831 45	329 88	5,427 93	3,108 97	2,322 27	.....	14,157 18
	December	142 74	108 94	143 22	2,740 48	1,119 17	123 75	....	4,378 30
	Totals.	3,316 37	137,125 24	7,763 22	51,716 76	42,879 47	25,909 88	119 00	268,824 94

GRADE SEPARATION, NORTH TORONTO.

The question of the separation of the grades of the streets from the grade of the railway tracks through the northern section of the City has become a very live issue, because of the application of the Canadian Northern Railway for authority to construct a line through it.

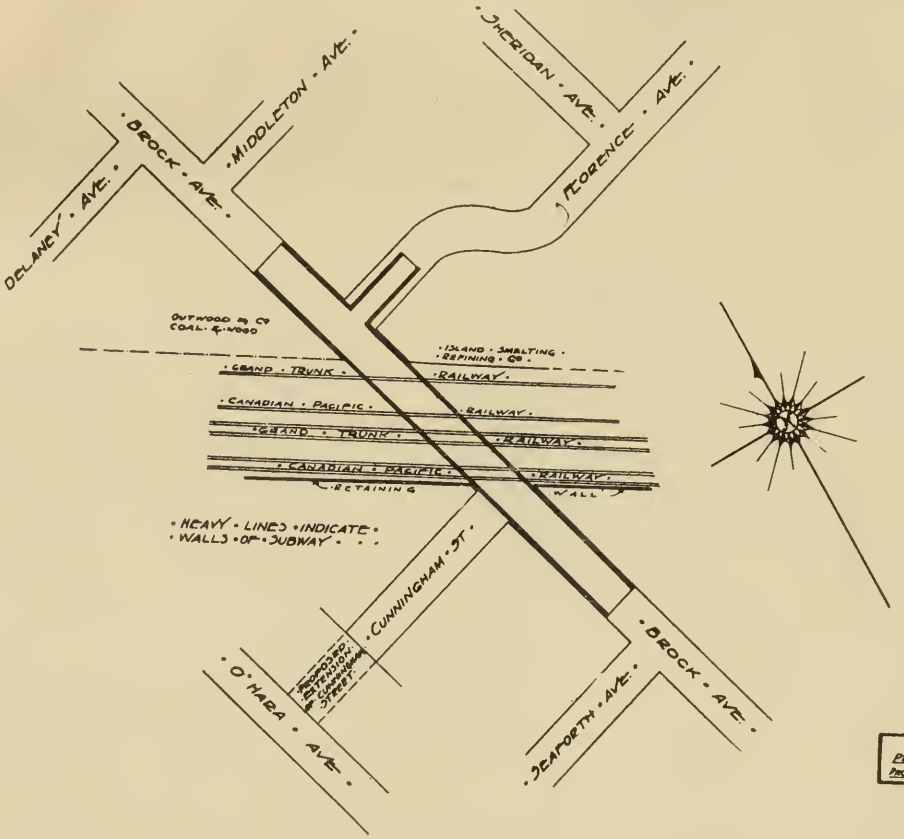
This line is to enter the City on the east, near Summerhill Avenue, and immediately north of the Canadian Pacific Railway, North Toronto Branch, and parallel that branch across the Rosedale Ravine, Yonge Street, Avenue Road, and other streets as far west as Dovercourt Road, where it will deflect in a north-westerly direction, crossing Davenport Road at Lansdowne Avenue, and crossing St. Clair Avenue immediately east of the Middle Division tracks of the Grand Trunk Railway; then crossing over that railway it will deflect in a westerly direction and leave the City at a point west of the Union Stock Yards, and about 1,000 feet north of St. Clair Avenue.

The crossings over the tracks of the Grand Trunk Railway, one just north of Davenport Road and the other just north of St. Clair Avenue, are to be made by means of overhead bridges. Yonge Street and Avenue Road are to be carried underneath the railway tracks by subways, as are the streets from Dovercourt Road west to the City limits. However, the details of the subways have yet to be decided by the Board of Railway Commissioners, with the exception that they have decided that at Yonge Street and Avenue Road, the Canadian Northern Railway and the Canadian Pacific Railway must come together and build one joint subway over each of these streets.

With respect to the existing crossings of the Canadian Pacific Railway and the proposed crossings of the Canadian Northern Railway, between Avenue Road and Dovercourt Road, the Board of Railway Commissioners have ordered that the railway companies file plans showing a scheme for the separation of grades over these streets.

BROCK AVENUE SUBWAY.

The construction of a subway underneath the tracks of the C. P. R. and G. T. R. on Brock Avenue, between Seaforth and Middleton Avenues, as authorized by Orders No. 11871, dated October 5th, 1910, No. 13150, March 8th, 1911, and No. 14079, June 28th, 1911, was commenced by the Grand Trunk Railway on October 10th. The City's estimate of the cost of for:



CITY OF TORONTO

PROPOSED BROCK AVENUE SUBWAY
BETWEEN
MIDDLETON AVENUE & SEAFORTH AVENUE

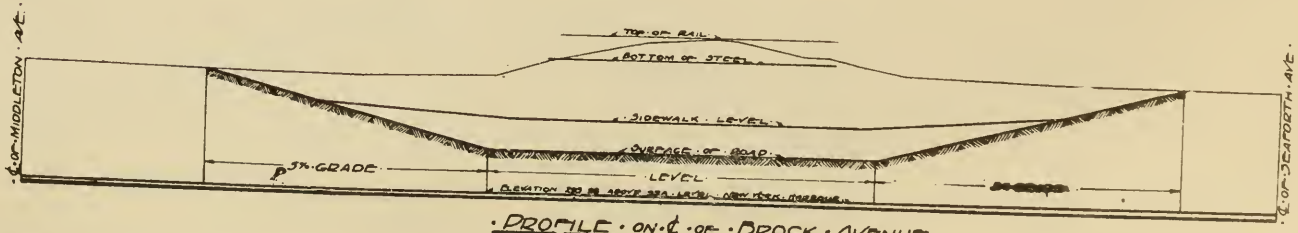
CITY ENGINEER'S OFFICE TORONTO
DEPARTMENT OF RAILWAYS & BRIDGES
DATE: NOVEMBER 1911

A.C.K. Brunnell
ASSISTANT ENGINEER

ASST. ENGINEER RAILWAYS & BRIDGES

CITY ENGINEER

SCALES
PLAN = 100 = 1"
PROFILE HOR 30 = 1" VER 10 = 1



PROFILE ON ℄ OF BROCK AVENUE

CITY OF TORONTO

PROPOSED BLOOR STREET SUBWAYS

BETWEEN

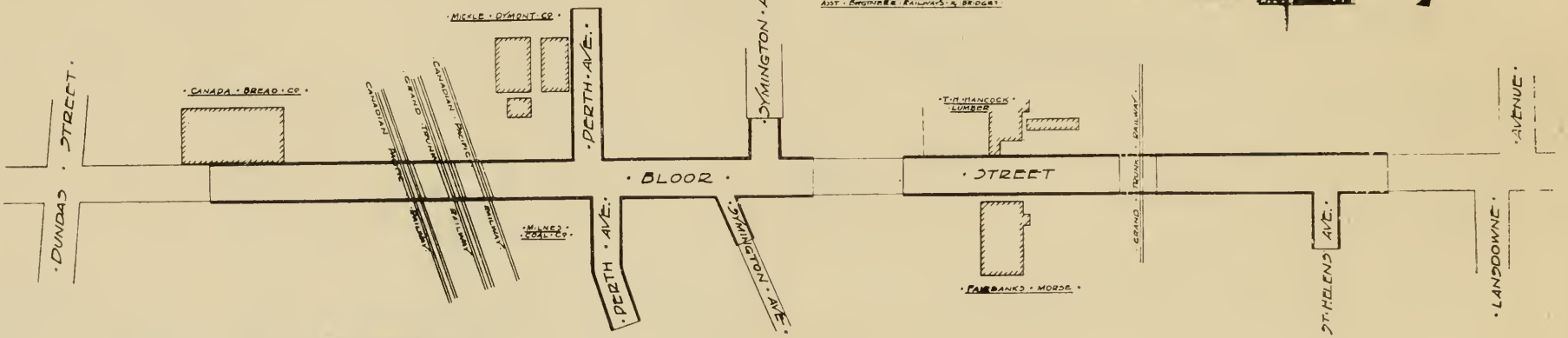
DUNDAS STREET & LANSDOWNE AVENUE

SCALES
HOR 40 : 1
VER 10 : 1

CITY ENGINEERS OFFICE TORONTO
DEPARTMENT OF RAILWAYS & BRIDGES
DATE 11TH OCTOBER 1911

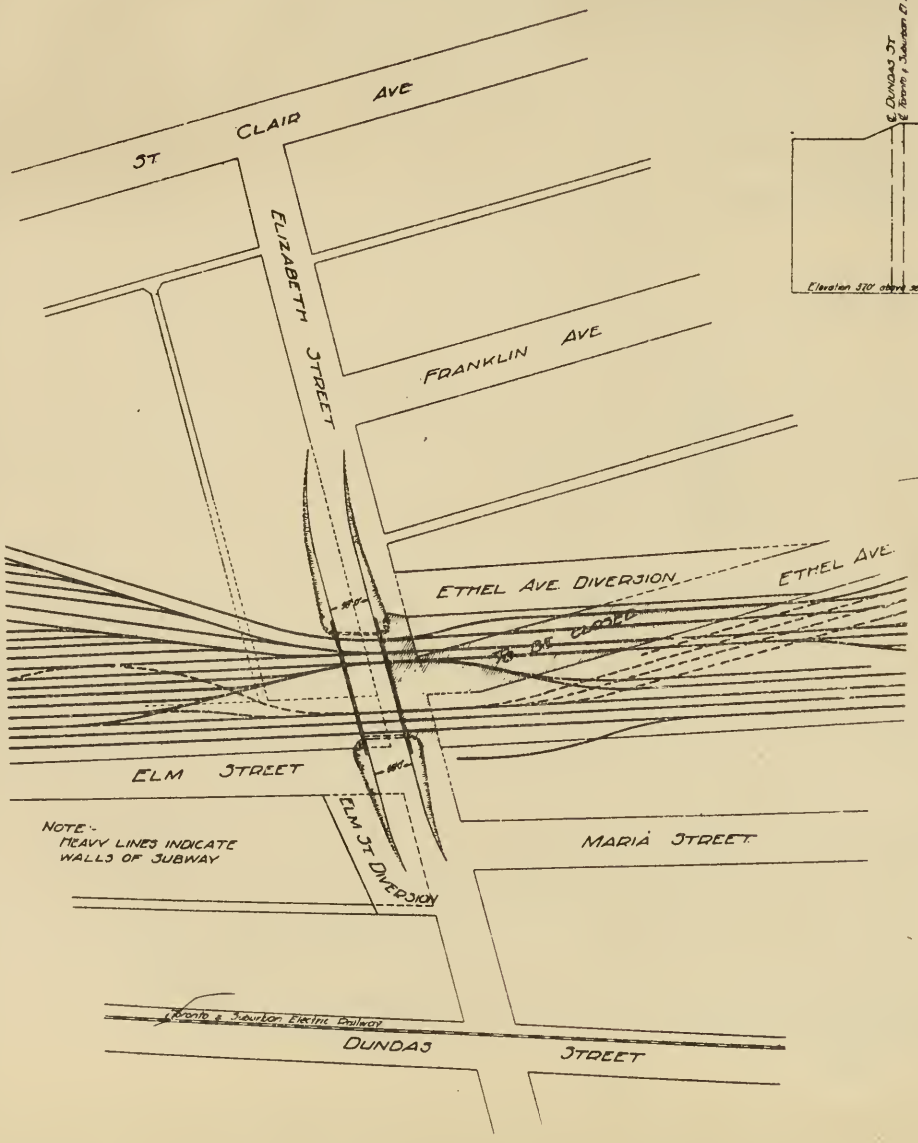
ASSISTANT ENGINEER

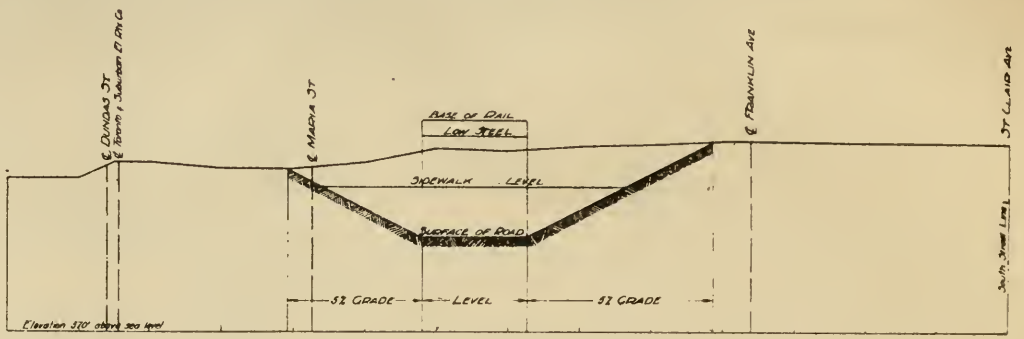
ASST ENGINEER RAILWAYS & BRIDGES



HEAVY LINES INDICATE WALLS OF SUBWAY

PROFILE ON ℄ OF BLOOR STREET





PROFILE ON ℄ OF ELIZABETH STREET

CITY OF TORONTO

PROPOSED ELIZABETH AVE. SUBWAY
BETWEEN
DUNDAS STREET & ST. CLAIR AVENUE.

CITY ENGINEER'S OFFICE TORONTO
DEPARTMENT OF RAILWAYS & BRIDGES
DATE:- DECEMBER 1911

SCALES:-
HORIZONTAL 100-1"
VERTICAL 10-1"

A.K. Burnell
Assistant Engineer

Assistant Engineer Railways & Bridges

Approved 7/12/11
City Engineer

CITY OF TORONTO

PROPOSED COXWELL AVENUE SUBWAY

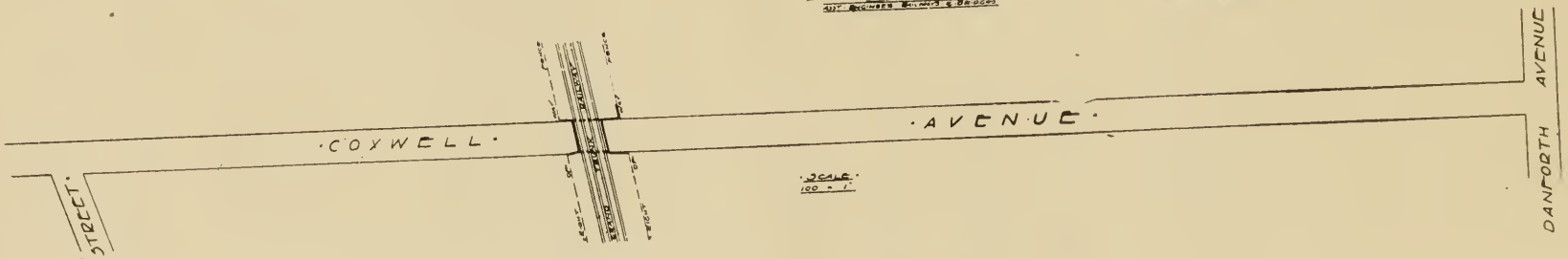
BETWEEN

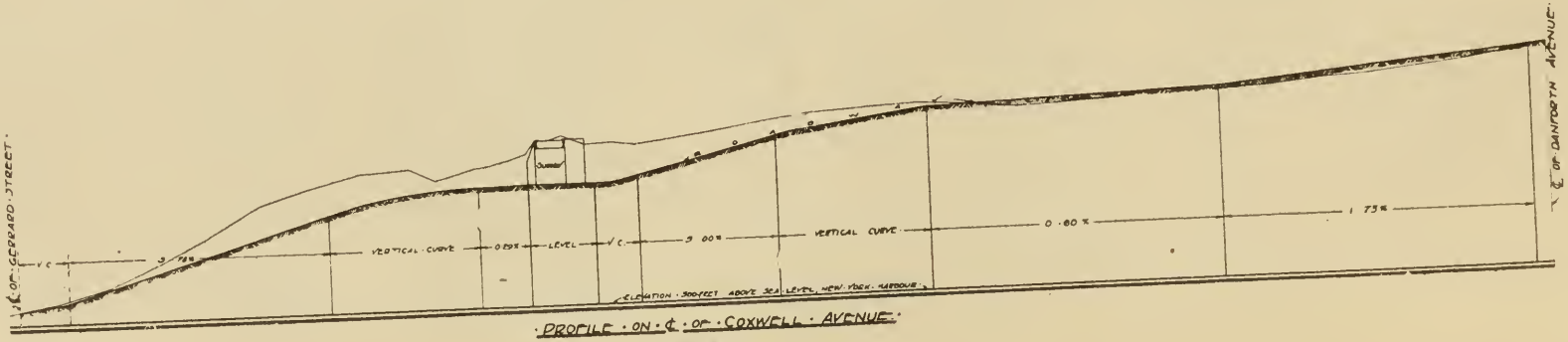
GERRARD STREET & DANFORTH AVENUE

CITY ENGINEER'S OFFICE, TORONTO.
DEPARTMENT OF RAILWAYS & BRIDGES.
DATE 13TH MARCH 1911

ASSISTANT ENGINEER.

CITY ENGINEER RAILWAYS & BRIDGES.





PROFILE ON ℄ OF COXWELL AVENUE

SCALE
HOR. 100 : 1
VER. 20 : 1

(1) Construction	$127,763 00
(2) Land damages	100,000 00
Total	$227,763 00

The actual cost to be borne and paid for as follows:

(1) $5,000 out of the Dominion Government's Railway Crossing Fund.
(2) 20 per cent. of the remainder to be paid by the City.
(3) 32 per cent. by the C. P. R.
(4) 48 per cent. by the G. T. R.

The City's share based on this estimate, is, therefore, $44,522.60.

Cunningham Street, on the south side of the subway, is to be closed at Brock Avenue, but be opened through to O'Hara.

The grades of approach on either side of the subway are to be five (5%) per cent. Page 293 shows skeleton of the subway.

It is expected that the subway will be open for vehicular and pedestrian traffic sometime during the coming summer.

ELIZABETH STREET SUBWAY.

The Canadian Pacific Railway are constructing a subway at Elizabeth Street (Runnymede Road) under Order of the Board of Railway Commission (Order No. 12050), dated October 13th, 1910. The width of the subway is to be 56 feet, made up of two roadway spans of 20 feet, and two sidewalk spans of 8 feet. Ethel Avenue, on the north-east side of the subway, is to be diverted, and a portion of Elizabeth Street is to be closed. See page 293.

The Railway Company are to reimburse the City for the amount of abuttal damages, if any, caused by the City closing a portion of the said street, and 20 per cent. of the cost of constructing the subway not exceeding the sum of $5,000, to be paid out of "The Railway Grade Crossing Fund."

COXWELL AVENUE PROPOSED SUBWAY.

The City have made application to the Board of Railway Commissioners for Canada, for an Order to authorize the construction of a subway underneath the tracks of the Grand Trunk Railway on Coxwell Avenue, between Gerrard Street and Danforth Avenue.

The Board have made an Order to the effect that the City may construct this subway. They (the City) to pay the total cost of same, and to provide for a four (4) track crossing of the railway. Detail plans have now been filed by the City with the Board, and it is expected that the Order of the Board, approving of these plans, will be issued early in the coming year.

The subway is to be fifty-six (56′) feet in width, having two roadway spans of twenty-six feet six inches, and two sidewalk spans of six feet six inches.

From Gerrard Street the grade will be an ascending one of five decimal seventy-eight (5.78%) per cent. to the subway, and from the subway the grade will continue to rise at a rate of five (5%) per cent. towards Danforth Avenue. Page 294 shows skeleton of the subway.

BLOOR STREET PROPOSED SUBWAYS.

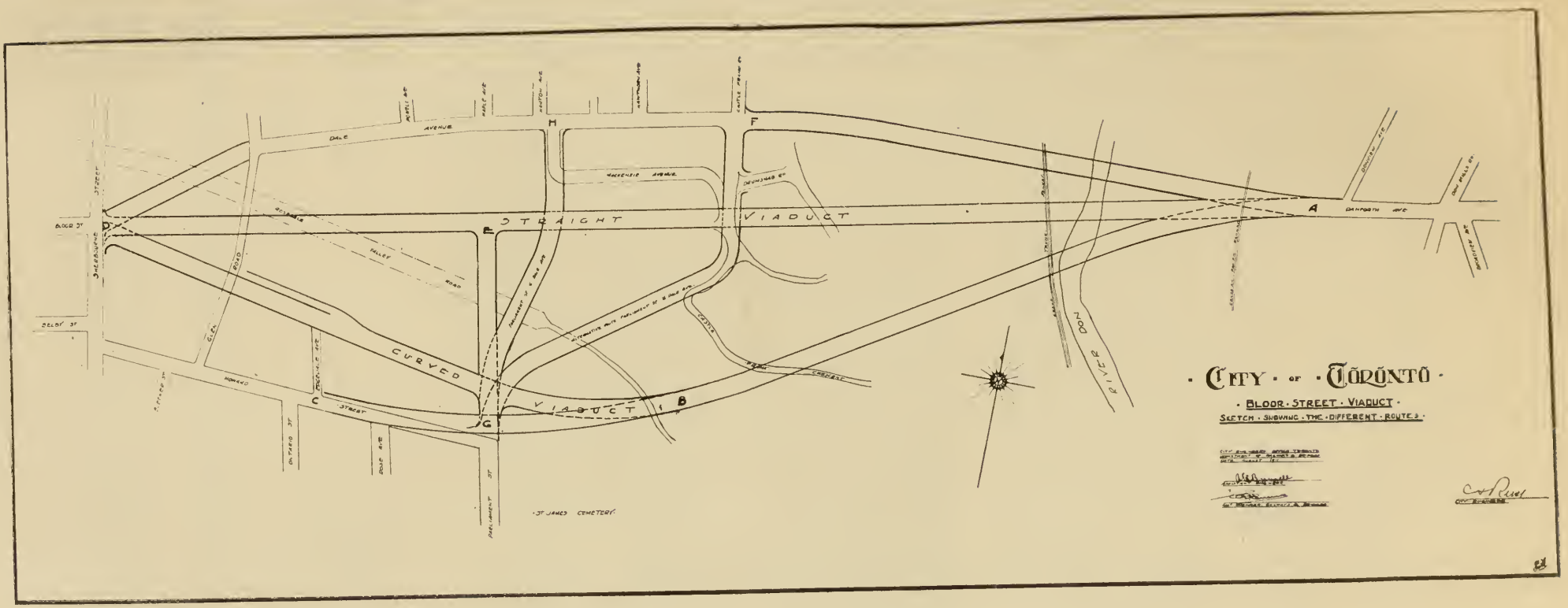
The City have made application to the Board of Railway Commissioners for Canada, for an Order to authorize the construction of two subways on Bloor Street, underneath the two crossings of the Grand Trunk and the Canadian Pacific Railways, between Lansdowne Avenue and Dundas Street.

Bloor Street between these two points being a main thoroughfare for traffic moving east and west, and because it is altogether probable that at some very not distant date, the street railway tracks on Bloor Street, that now terminate at Lansdowne Avenue, will be extended through to Dundas Street, a subway the full width of the street, which is sixty-six (66′) feet, has been provided for; spans of twenty-two (22′) feet each, and two sidewalk spans of eleven (11′) feet each.

At the points of crossing of the tracks the street level will be dropped approximately eighteen (18′) feet, and the approaches will be on a grade of five (5%) per cent.

See page 294 for skeleton plan. The estimated cost of the subways is for:

(1) Construction	$281,003 63
(2) Land damages	450,000 00
Total	$731,003 63


DALE AVENUE
BLOOR ST
STRAIGHT VIADUCT
CURVED VIADUCT
RIVER DON
ST JAMES CEMETERY
CITY OF TORONTO
BLOOR STREET VIADUCT
SKETCH SHOWING THE DIFFERENT ROUTES

DON INDUSTRIAL TRACKS.

The construction of the City's tracks on the east bank of the Don was begun last year. (See City Engineer's Report, 1910.)

Up to December 31st of last year the work had been completed from the C. P. R. connection south of Winchester Street to a point about five hundred (500′) feet north of Queen Street, except for the sloping of the cut through the Isolation Hospital hill, north of Gerrard Street. South from Queen Street the rails and ties had been laid and the ballast distributed to Eastern Avenue. Three hundred (300′) feet of filling had been done to the south of Eastern Avenue, on the property of the Sunlight Soap Company.

This year the sloping of the cut through the Isolation Hospital hill has been completed, some 4,998 cubic yards of earth materials being removed from the hill, and utilized for grading City property south of the Gerrard Street bridge. The methods employed were similar to those of 1910. The cost per cubic yard, including all labor and material used, was 44.1 cents. The bulk of the material was clay and very difficult to handle with pick and shovel, despite the blasting that was done.

The tracks between Queen Street and Eastern Avenue have been ballasted and surfaced, but have not as yet been connected with those to the north of that street, because of the construction work being carried on in connection with erection of the Queen Street high level bridge.

On July 1st the tracks to the north of Queen Street were turned over to the C. P. R., under an agreement between that Company and the City, by which they were to maintain and operate over these tracks, paying the City an annual rental of $1,050.92.

Summary of cost:

Total original estimate	$37,000 00
Expended to date	35,193 00
Balance	$1,807 00

C. P. R. APPLICATION FOR FREIGHT TERMINALS ON THE GOVERNMENT HOUSE PROPERTY ON KING STREET

The Canadian Pacific Railway Company, in January, made application to the Board of Railway Commissioners for Canada for an Order to authorize the construction of express and freight terminals on the block

bounded by King, Simcoe, Wellington and John Streets, and on part of which the Lieutenant-Governor's house is at present situated.

The C. P. R. planned to reach this property by the construction of a switching track, to run from a point on their main line at the foot of Tecumseth Street, then along the south side of Front Street to Spadina Avenue, where the track deflected to the left, crossing the intersection of Spadina Avenue and Front Street, between Wellington Street and King Street, at grade.

A skeleton of the proposed tracks and warehouse is shown at page 296.

The City strenuously opposed the application in respect to the level crossing at Spadina Avenue and Front Street, but the Board did not see fit to concur, and have approved of the C. P. R. plans, subject to the filing of details for the level crossing at Front Street and Spadina Avenue.

CIVIC CAR LINES.

GENERAL.

By-law No. 5626, passed at the municipal election of January 1st of this current year, authorized the expenditure of $1,157,293 for the building and equipping of street railway lines, subject to the approval of the Ontario Railway and Municipal Board, on certain streets of the City of Toronto, as follows:

1st. On St. Clair Avenue, from Yonge Street to the Northern Division tracks of the Grand Trunk Railway, 3.10 miles.

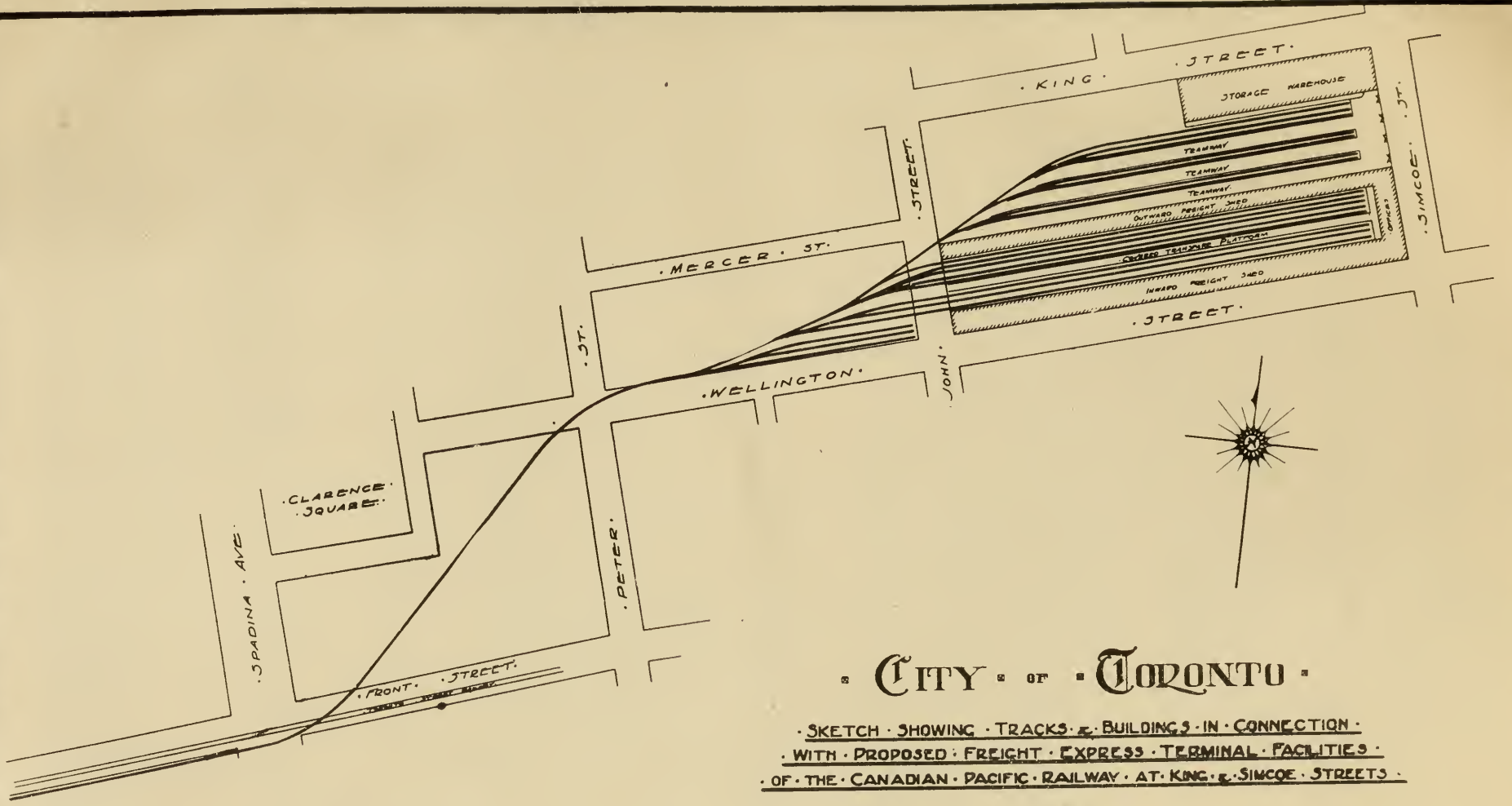
2nd. On Bathurst Street, from St. Clair Avenue to Davenport Road, then along Davenport Road to Dupont Street, 1.14 miles.

3rd. The "Rosedale Loop," from South Drive to South Drive, via Glen Road, Summerhill Avenue, Maclennan Avenue, Schofield Avenue and Glen Avenue, 1.45 miles.

4th. On Gerrard Street and Coxwell Avenue, from Greenwood Avenue to Main Street, then north on Main Street to Danforth Avenue, 2.14 miles.

5th. On Danforth Avenue, from Greenwood Avenue to the east City limits, 2.10 miles.

It was decided by Council that the lines on St. Clair Avenue and on Gerrard Street should be commenced first, and on January 26th we were instructed to do the necessary grading by day labor. Accordingly a start was made about the first of March with a few men clearing and grubbing



CITY OF TORONTO

SKETCH SHOWING TRACKS & BUILDINGS IN CONNECTION WITH PROPOSED FREIGHT EXPRESS TERMINAL FACILITIES OF THE CANADIAN PACIFIC RAILWAY AT KING & SIMCOE STREETS

SCALE 100 = 1'

CITY ENGINEER'S OFFICE TORONTO
DEPARTMENT OF RAILWAYS & BRIDGES
1ST JANUARY 1911

A.C.C. Bunnell
ASSISTANT ENGINEER

1ST ENGINEER RAILWAYS & BRIDGES

Geo Rust
CITY ENGINEER

the trees within the limits of the street line on Gerrard Street, between Woodbine and Coxwell Avenue. This work was completed early in April.

Operations were then discontinued pending the approval of the plans, profiles, etc., of these two lines by the Ontario Railway and Municipal Board. It was not until the 23rd of June that this approval was given, and then only after the City had filed information as to the estimated cost and probable traffic returns.

Following the Board's approval of the construction of these lines an Order was issued on the 24th of June, ordering an interchange of traffic between the lines when completed and those of the Toronto Railway Company, which Order is being appealed against by the Company.

Previous to the issue of these two Orders there had been some discussion regarding the operation of the lines by storage battery cars.

The gauge of the lines is to be the same as the Toronto Railway, that is 4 ft. 10⅞ in.; and the rail a 7-in. "T" section, specially adapted to street railway requirements.

Council, on July 7th, let the contracts for the supply of the necessary plant required by the Department to economically handle the construction of the line, as follows:

1 Marion full circle swing steam shovel, model 35—F. H. Hopkins & Co.	$8,665 00
1 Thew full circle swing steam shovel, type No. 1—Thew Automatic Shovel Co.	6,780 00
40 four-yard K. & J. two-way dump cars, trucks 36-inch gauge—F. H. Hopkins & Co.	3,500 00
6 four-wheel connected saddle tank locomotives, 10-in. x 16-in. cylinders for 36-in. gauge—H. K. Porter Co.	20,385 00
200 ton of 30-lb. "T" rail	6,500 00
24 Sets of switches—Whyte Railway Signal Co.	1,680 00
Spikes, bolts, nuts and fish plates—F. H. Hopkins & Co.	847 60
	$48,357 60

After the car lines have been completed it is the intention to use this plant for general street grading purposes, especially in the north-east and north-west sections of the City.

GERRARD STREET.

The work on Gerrard Street and Coxwell Avenue consists of:

1st. The extension of two concrete culverts crossing Gerrard Street, between Morley and Redwoods Avenue, and the building of a new one to

replace the wooden bridge over the ravine immediately east of the Toronto Golf Club stables east of Coxwell Avenue.

2nd. The handling of some 50,000 cubic yards of earth materials, which will materially improve the grades of the street.

3rd. The laying of 1.85 miles of double track.

4th. The construction of the pole line, trolley wires and feeders.

The last two items, namely, the track structure and overhead construction, are altogether chargeable to Civic Car Lines. The culvert construction is a direct charge against the appropriation for culverts, while the bulk of the grading is chargeable as a local improvement.

In order that the work might not be materially delayed, it was decided to commence grading by hand and with slush scrapers, and not await the arrival of the construction plant; the light work with the short haul to be done by the scrapers, the heavier work to be excavated by hand, utilizing the two-yard dump cars and 20-lb. rail then in service on the Don industrial tracks to haul the excavated materials to the fills.

The extension and the construction of the culverts was commenced on July 21st, and completed October 12th. The total number of cubic yards of concrete put in place being 277.

Grading by hand commenced on August 8th, five days after the completion of the sloping of the side of the cut through the Hospital hill on the Don industrial tracks, north of Gerrard Street. Grading with slush scrapers was commenced on August 17th, and was discontinued after September 13th.

Arrangements were made with the Grand Trunk Railway for use of the south side of their right of way between Morton Road and Woodbine Avenue for the unloading and storage of the construction plant and materials. The plant began to arrive August 17th, and was all unloaded and ready for use by August 21st, with the exception of the steam shovel.

The steam shovel was all set up on September 12th, when it was found that it would not revolve, due to severe friction in the rotation journal. Although a machinist was at once sent by the makers, the Marion Shovel Company, it was September 30th before the shovel was ready for work, when it cut in at Station 42 + 50 west of Woodbine Avenue. It cut out at Station 61 + 00 immediately east of Coxwell

Culvert and Trestle.

Cut at Golf Club Grounds.

Civic Car Line, Gerrard Street East.

Avenue, on November 22nd, because of adverse weather and material conditions, having worked 48 days and averaging 503 cubic yards per day; the excavated material being hauled by the locomotives and dump cars. Grading by hand, between Woodbine Avenue and Morton Road, was continued until December 14th, when all work was suspended for the winter.

The total excavation, between August 8th and December 14th, is as follows:

Gerrard Street, South.—Greenwood Avenue to Coxwell Avenue—

By hand	5,143 cubic yards.	
By scrapers	2,356 cubic yards.	
Total		7,499 cubic yards

The maximum cut along the centre line of the street being 3½ feet at Highfield Avenue, while the depressions at Morley Avenue and east of Redwoods Avenue were each lifted about 7 feet. The width of the roadway across these depressions which was formerly about 30 feet, was increased to 50 feet, and will be still further widened to 66 feet, the full width of the street, in the spring.

Coxwell Avenue.—Gerrard St. South to Gerrard St. North—

By hand	3,838 cubic yards

All but 542 yards of which was utilized to widen out the roadway immediately south of Gerrard Street North to 66 feet. The average cut was 2½ feet, and extended from Gerrard Street South north for about 600 feet.

Gerrard Street North.—Coxwell Avenue to Woodbine Avenue—

By steam shovel	24,158 cubic yards

Woodbine Avenue to Morton Road—

By hand	6,855 cubic yards
Total	42,350 cubic yards

Between Coxwell and Woodbine Avenues very radical alterations were made in the width and grade of the street, which formerly was nothing more than a country trail. Under an arrangement with Robins, Limited, owners of the Toronto Golf Grounds, the sharp corners over this portion of the street have been rounded, the width of the roadway widened to 66 feet, and regular grades established. The old wooden bridge crossing the ravine east of the entrance to the Club House of the Golf Grounds has been removed and replaced by an earth fill, with a maximum height of 35 feet. The greatest cut made by the steam shovel was 17 feet, between Stations 45 and 49. Between Woodbine Avenue and Morton Road the maximum cut is about 7 feet, and has opened up a seam of excellent gravel which is being utilized for the ballasting of the permanent track.

The laying of the permanent track commenced on November 16th; 2,450 feet of double track being laid before the work shut down. This was all confined to that portion of the street between Woodbine and Coxwell Avenues. The track is supported on cedar ties spaced 2-foot centres. The ballast is of gravel supplied from the pit on the street allowance east of Woodbine Avenue.

As the work progressed, all sidewalks, fences, etc., that it was found necessary to remove were carefully maintained and replaced after the work had been completed. Additional fences were built where necessary. In wet weather it was found difficult to keep the roadway properly drained, especially between Coxwell and Greenwood Avenues, where the material is a hard, sandy, interglacial clay. On Coxwell Avenue it was necessary to lower the gas main, as it was found to be just at the surface of our new grade. The Hydro-Electric poles also interfered with the steam shovel work between Stations 45 and 49, and had to be shifted.

The average number of men employed on the work was 85. The greatest number for any one week was for the week ending February 30th, when there were 134 men on the work.

The labor and material charges per cubic yard for actual work performed in the handling of the earth materials by the different methods employed are:

1. Steam shovel, 12 cents.
2. Team scrapers, 40.2 cents.
3. Pick and shovel, 43 cents.

The track work is not sufficiently complete to state the unit cost per foot; also the nature of the other work performed, such as clearing and

Trestle for Spadina Avenue Fill.

Civic Car Lines, St. Clair Avenue.

grubbing of the trees, removing sidewalks and fences, laying and shifting temporary tracks, etc., varied so much that it is impracticable to state unit prices for same.

A summary of the moneys actually expended by this branch of the Department in connection with the above described work, is as follows:

Description of Work.	*Labor.*	*Material*	*Total.*
General expense	$3,403 84	$435 61	$3,839 45
Clearing, etc.	766 48	26 62	793 10
Shovel excavation	2,595 37	529 08	3,124 45
Team excavation	8,462 58	86 34	8,548 92
Permanent track	2,023 65	7,027 09	9,050 74
Temporary track	1,352 28	4,505 22	5,857 50
General plant	886 27	21,966 28	22,852 55
General plant repairs	962 59	288 01	1,250 60
Buildings	713 00	429 93	1,142 93
Trestles and culverts	1,436 20	1,624 47	3,060 67
Ditching and temp. crossings	95 63	281 85	377 48
Misc. work, train service	229 94	72 49	295 43
General stores account	.....	.....	.....
Total expenditure	22,920 83	$47,749 84	$70,670 67
General plant account will be credited as follows,		$21,966 28	
Less 15 per cent. depreciation charges		3,294 94	
			$18,671 44
Net total expenditure			$51,999 23

The item of general expense includes all preliminary engineering, field engineering, office and field supervision, material inspection, and stores charges, a portion of the charge for watchman, along with several other small miscellaneous charges.

ST. CLAIR AVENUE.

The work on St. Clair Avenue consists of:

1st. The extension of the concrete culvert in the ravine between Spadina Avenue and Bathurst Street, the extension of the stone culvert west of Ossington Avenue, the renewal of the wooden box culvert at Lauder Avenue, along with several alterations and renewals to existing culverts.

2nd. The widening and regrading of St. Clair Avenue, as provided for in By-law No. 5761, between Yonge Street and the Northern Division tracks of the Grand Trunk Railway. From Yonge Street to Avenue Road the street is being widened from 66 feet to 86 feet, and from Avenue Road to the railroad tracks from 66 feet to 100 feet. This involves the moving of about five (5) miles of fences and sidewalks, seven (7) miles of pole lines, the cutting and clearing of several hundred trees, etc., along with the handling of some 127,000 cubic yards of earth materials, 95,500 cubic yards of which are required for the carrying of the new roadway across the ravine between Bathurst Street and Spadina Road. The bulk of the grading is very light, and except for a few short stretches, the cuts will not exceed four (4) feet, and will average about two (2) feet. The material required for filling exceeds the excavation by about 75,000 yards. This deficiency is to be obtained by expropriating and regrading a block of land at the south-east corner of St. Clair Avenue and Bathurst Street, having a frontage on St. Clair Avenue of 530 feet, and on Bathurst Street of 490 feet. There are now on this property two (2) streets (Hilton and Wells Hill Avenues) which, while they intersect St. Clair Avenue theoretically, do not practically, because of their high elevation above that street. When the grading is completed, these adverse conditions will cease to exist.

3rd. The laying of 3.1 miles of double track.

4th. The construction of the pole line, trolley wires, and feeders.

As in the case of the Gerrard Street line, the last two items, namely, the track structure and the overhead construction, are altogether chargeable to Civic Car Lines. The culvert construction is a direct charge against the appropriation for culverts, while the bulk of the gradings is chargeable to street widening.

Headquarters were established at the south-west corner of Bathurst Street and St. Clair Avenue, and have been built with a view of carrying on the work all winter. Arrangements were made with the Grand Trunk Railway for the use of that portion of their right-of-way at Davenport Station, alongside of Station Street and north of their freight shed, for the unloading of the plant and construction material. Station Street has been closed, and is being utilized as a storage yard, also the Grand Trunk team track alongside has been extended some 300 feet to increase unloading facilities.

The extension of the culverts was begun on August 24th and completed November 30th; the 3-ft. x 5-ft. stone culvert west of Ossington

Lauder Avenue Fill, Looking East—Civic Car Lines, St. Clair Avenue.

Avenue being extended in concrete 105 feet, while the 6-ft. x 6-ft. concrete culvert in the ravine between Spadina Avenue and Bathurst Street was extended in concrete some 175 feet. The wooden box culvert under St. Clair Avenue was removed entirely and replaced by a new one 4-ft. x 4-ft. x 125-ft. long, together with a 3-ft. x 3-ft. x 97-ft. culvert across Lauder Avenue on the north side of St. Clair Avenue, to carry the surface water flowing south on Lauder Avenue; with the installation of sewage system at this point, these culverts will be done away with.

The unloading of the plant, which included 3 Porter locomotives, 20 K. & J. dump cars, 1 Thew steam shovel, 30-lb. "T" rail, ties, etc., was commenced on August 17th. The laying of the construction tracks was started a few days later, and these tracks now extend east to beyond Bathurst Street.

The steam shovel was set up and ready for work on September 2nd, but because of the non-removal of the poles of the Bell Telephone Company and the Toronto Electric Light Company, and the delay in the arrival of the switch material, it was not until September 21st that the shovel cut in, commencing at Station Street on the south side of St. Clair Avenue, the excavated material being hauled by work train to Lauder Avenue, where the grade of St. Clair Avenue was raised some 3½ feet. The shovel has completed all the grading possible for it to do between Station Street and Glenholme Avenue (Stations 168 + 00 to 120 + 00), and is now working on the north side of St. Clair Avenue, east of Oakwood Avenue (Station 113 + 00).

The shovel has worked a total of 66 days, and ran on an average 6 hours per day, out of a possible 88 days of 9 hours each; that is, the efficiency of the shovel was but fifty per cent. This was due to adverse weather conditions, there being nearly 20 days of rain, and the soil being of clay, made the operation of the work trains over the tracks impossible until the soil dried out. On the two or three occasions that an attempt was made to operate the trains over the wet soil, the tracks were almost completely immersed. The shovel has handled in all 19,323 cubic yards, and averaged 292 cubic yards per day for day of 6 hours. The average daily length of cut was 131 feet, width 26 feet, and depth 2 feet 4 inches.

The best days' runs were on December 6th and 7th, when 920 cubic yards were removed each day, the width of cut being 34 feet, and the average depth 6½ feet. The material was disposed of as follows:

Lauder Avenue	2,988	cub. yds.
Ossington Avenue	11,319	"
Fill between Spadina Ave. and Bathurst St.	3,460	"
Shallow fills between Station Street and Boon Avenue	1,556	"
Total	19,323	"

The material and labor charges per cubic yard for actual work performed are as follows:

Excavation	10.91	cents.
Hauling	6.98	"
Placing	7.46	"
Total	25.35	"

The average haul was 3,300 feet, and was made by two trains of from 5 to 8 cars each.

The new elevation of the roadway between Bathurst and Spadina Avenue being 25 feet above the former level and 46 feet above the low point of the ravine, it was necessary to construct a trestle some 1,096 feet in length from which to dump the filling. This trestle was commenced on September 7th and completed December 21st, at a total cost of $1,529.34 for labor and $4,257.63 for material. We first commenced to fill from off this trestle on December 19th. Temporary sidewalks and stairs have been constructed for pedestrians around the trestle, but vehicular traffic has been suspended since the latter part of September, and will be until such time as the fill is of sufficient width to allow teams to cross with safety.

2,400 feet of permanent double track has been laid from Station Street to Elmwood (166 + 50 — 142 + 50). As on Gerrard Street, the tracks are laid on cedar ties with gravel ballast; the gravel being received on cars at Davenport Station from the York Sand & Gravel Company, and transported to the job by work train. This track has not as yet been lifted or surfaced.

The necessary alterations to the sewers, water and gas mains, and pole lines, have been carried out ahead of the grading by the other various City Departments and Public Utilities Companies, under whose jurisdiction they come

In connection with the street widening and the maintenance of traffic on the street, 4,969 feet of sidewalk have been shifted at a total

cost of $123.48, or 2.48 cents per foot. This does not include the walk built around the north side of the trestle between Spadina Avenue and Bathurst Street. $160.97 has been expended in trying to keep the roads in condition for wagon traffic. This charge will be greatly increased in the spring, because of the clayey nature of the St. Clair Avenue soil. In very wet weather the greater portion of the street is practically impassable for heavy teaming. 383 trees and sundry bushes and hedges have been grubbed, cut up into logs, and teamed into piles, at a cost of $1,909.58.

8,417 feet of fencing has been taken down, 5,790 feet of which has been re-erected at a total cost of $1,226.25. These fences were of various types, but nearly all were in a bad state of repair, and a considerable amount of new material had to be supplied for their re-erection.

9,035 feet of ditches have been dug, at a total cost of $439.38, or 4.86 cents a foot.

61 temporary crossings have been built over the centre cut for the permanent tracks and over the temporary tracks. These have cost, for material $1,047.78, and $380.08 for labor.

$1,415.24 has been spent for lighting and policing the work at night.

The average number of men employed per day was 87. A maximum of 111 being reached week ending November 30th.

A summary of the moneys actually expended by this branch of the Department, in connection with the above-described work, is as follows:

Description of Work.	*Labor.*	*Material.*	*Total.*
General expense	$8,323 03	$2,597 31	$10,920 34
Clearing, etc.	3,202 25	269 72	3,471 97
Shovel excavation	4,775 16	980 99	5,756 15
Team excavation	76 32	1 50	77 82
Permanent track	1,853 43	7,795 54	9,648 97
Temporary track	4,857 79	4,534 13	9,391 92
General plant	306 93	22,182 72	22,489 65
General plant repairs	330 28	124 25	454 53
Buildings	313 85	819 75	1,133 60
Trestles and culverts	3,786 97	7,335 20	11,122 17
Ditching and temp. crossings	1,143 45	1,123 06	2,266 51
Misc. work, train service	49 16	203 92	253 08
General stores account	.....	35,337 29	35,337 29
Total expenditure	$29,018 62	$83,305 38	$112,324 00

General plant account will be credited as follows,	$22,182 72	
Less 15 per cent. depreciation charges	3,327 41	
		$18,855 31
Net total expenditure		$93,468 69

The item of general expense includes all preliminary engineering, field engineering, office and field supervision, material inspection, and stores charges, a portion of the charge for watchmen, along with several other small miscellaneous charges.

DANFORTH AVENUE.

(Broadview Avenue to Greenwood Avenue.)

The Toronto Railway Company having refused to construct a line on Danforth Avenue, from Broadview to Greenwood Avenue, to connect up with the projected Civic Line, from Greenwood Avenue east to the City limits, Council have decided that this line shall be built by the City. A By-law is, therefore, being put before the ratepayers for ratification at this New Year's elections, to provide debentures to the extent of $139,488 for the construction of this line.

PROPOSED SUBWAYS.

In 1910 Messrs. Jacobs & Davies, Consulting Engineers, New York City, submitted to Council a report on street railway transportation, in which they recommended the construction of an underground subway on Yonge Street, from Front Street to St. Clair Avenue, as the first step in the solution of a rapid transit system. Following this report, the City Council, in April, appropriated the sum of $5,000 for engineering services, preparation of detail plans and specifications, etc., to cover the construction of the subway along the above-named route.

On the advice of the City Engineer, Council, in August, abandoned this route for the following:

Commencing at Front and Bay Streets, along Bay, Teraulay Street extended, St. Vincent, Chapel and North Streets to Bloor Street, thence north on the continuation of the line of North Street to Ketchum Avenue, and along Ketchum Avenue to Davenport Road, thence in a northerly direction crossing McAlpine Avenue, Belmont Street, Ramsden Park, Townley Street and Gibson Avenue, thence north parallel to Yonge Street at a distance of 150 feet west of the west line thereof to a point south of Birch Avenue, thence north on Yonge Street to St. Clair Avenue.

A	B	C	REINFORCEMENT	D
5'0 to 6'6	30"	22"	1'6 Rods @ 6" c to c 12'6 long	24"
6'6 to 8'0	36"	28"	1'6 to 36 - 12'6	28"
8'0 to 9'0	36"	28"	1'6 to 36 - 14'0	28"

ALL REINFORCING BARS TO BE SQUARE TOED TWISTED OR DEFORMED

TABLE OF APPROXIMATE QUANTITIES PER LIN. FOOT OF STRUCTURE

A	CONC. MIX 1:2:4	CONC. MIX 1:4:8	STEEL	WATER PROOF
5'0 to 6'6	11.00 C.Yds.	1.88 C.Yds.	1189 lbs.	14.70 sq.Yds.
6'6 to 8'0	11.00 "	1.88 "	1393 "	16.80 "
8'0 to 9'0	12.15 "	1.88 "	1597 "	16.80 "

A	EXCAVATION
5'0"	6666 C.Yds.
6'6"	42.50 "
8'0"	44.56 "
8'6"	46.00 "
9'0"	47.00 "

CONCRETE MIX 1:2:4 FOR MAIN STRUCTURE.
CONCRETE MIX 1:2:4 ON OUTSIDE OF WATER PROOFING

TABLE OF APPROXIMATE QUANTITIES PER LIN. FOOT OF STRUCTURE

A	EXCAVATION
5'0	56.04 C.Yds.
6'6	58.05 "
8'0	59.14 "
8'6	59.80 "
9'0	60.24 "

A	CONC. MIX 1:2:4	CONC. MIX 1:4:8	STEEL	WATER PROOF
5'0 to 6'6	7.71 C.Yds.	1.45 C.Yds.	1210 lbs.	11.06 sq.Yds.
6'6 to 8'0	7.96 "	1.45 "	1418 "	11.07 "
8'0 to 9'0	8.20 "	1.45 "	1626 "	11.08 "

A	B	SEAL IN FOOTINGS
5'0 to 6'6	24"	11 Rods 6ft. c to c long
6'6 to 8'0	28"	1'6 to 36 - 8'0"
8'0 to 9'0	28"	1'6 to 36 - 9'0"

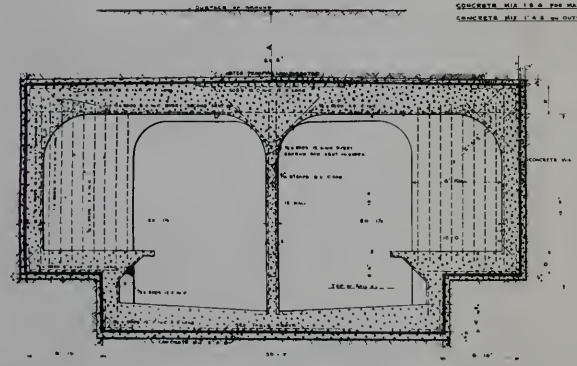
CITY OF TORONTO

PROPOSED SUBWAY

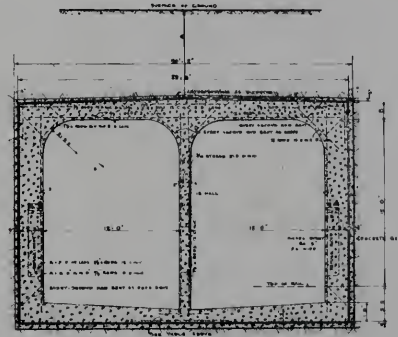
TYPICAL CROSS-SECTIONS

SCALE 1/4" = 1'-0"

This is one of the drawings referred to in my Contract with the City of Toronto.



SECTION THROUGH STATION



SECTION THROUGH SUBWAY

WHERE SPECIAL CASES OF JUNCTION OR SUB-SURFACE CONDITIONS OCCUR THE STRUCTURE MAY BE STRENGTHENED AND ADDITIONAL CAISSONS, THE STRENGTH OF THE STRUCTURE THE SAME. THE SPECIAL CONDITIONS WILL BE PROVIDED FOR AT DIRECTION FROM THE ENGINEER

CITY ENGINEER'S OFFICE TORONTO.
DEPARTMENT OF RAILWAYS & BRIDGES.
DATE 15th SEPTEMBER 1911

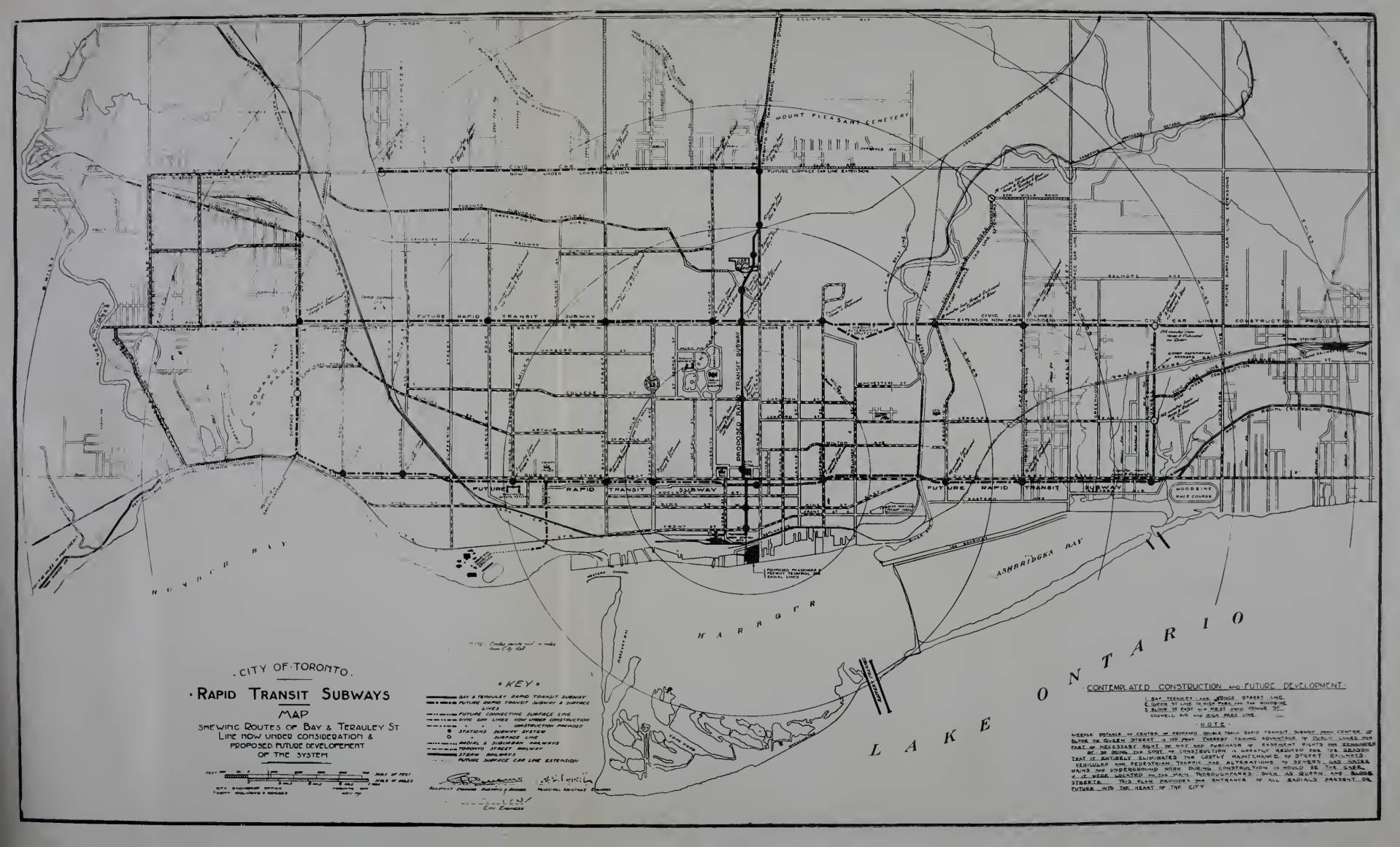
ASSISTANT ENGINEER RAILWAYS & BRIDGES

PRINCIPAL ASSISTANT ENGINEER

APPROVED

CITY ENGINEER

ENTERED BY
CHECKED BY
DRAWN BY


MOUNT PLEASANT CEMETERY
FUTURE RAPID TRANSIT SUBWAY
PROPOSED RAPID TRANSIT SUBWAY
CIVIC CAR LINES CONSTRUCTION PROVIDED
WOODBINE RACE COURSE
ASHBRIDGES BAY
HUMBER BAY
HARBOUR
LAKE ONTARIO
CITY OF TORONTO.
RAPID TRANSIT SUBWAYS
MAP
SHEWING ROUTES OF BAY & TERAULEY ST LINE NOW UNDER CONSIDERATION & PROPOSED FUTURE DEVELOPEMENT OF THE SYSTEM
KEY
BAY & TERAULEY RAPID TRANSIT SUBWAY
FUTURE RAPID TRANSIT SUBWAY & SURFACE LINES
FUTURE CONNECTING SURFACE LINE
CIVIC CAR LINES NOW UNDER CONSTRUCTION
CONSTRUCTION PROVIDED
STATIONS SUBWAY SYSTEM
SURFACE LINE
RADIAL & SUBURBAN RAILWAYS
TORONTO STREET RAILWAY
STEAM RAILWAYS
FUTURE SURFACE CAR LINE EXTENSION
CONTEMPLATED CONSTRUCTION AND FUTURE DEVELOPMENT
1 BAY, TERAULEY AND YONGE STREET LINE.
2 QUEEN ST LINE TO HIGH PARK VIA THE WOODBINE
3 BLOOR ST EAST AND WEST FROM YONGE ST.
COXWELL AVE AND HIGH PARK LINE
NOTE
AVERAGE DISTANCE OF CENTRE OF PROPOSED DOUBLE TRACK RAPID TRANSIT SUBWAY FROM CENTER OF BLOOR OR QUEEN STREET IS 1320 FEET THEREBY TAKING ADVANTAGE OF PUBLIC LANDS FOR PART OF NECESSARY RIGHT OF WAY AND PURCHASE OF EASEMENT RIGHTS FOR REMAINDER BY SO DOING THE COST OF CONSTRUCTION IS GREATLY REDUCED FOR THE REASON THAT IT ENTIRELY ELIMINATES THE COSTLY MAINTENANCE OF STREET RAILWAYS VEHICULAR AND PEDESTRIAN TRAFFIC AND ALTERATIONS TO SEWERS, GAS WATER MAINS AND UNDERGROUND WORK DURING CONSTRUCTION AS WOULD BE THE CASE IF IT WERE LOCATED ON THE MAIN THOROUGHFARES SUCH AS QUEEN AND BLOOR STREETS. THIS PLAN PROVIDES FOR ENTRANCE OF ALL RADIALS PRESENT OR FUTURE INTO THE HEART OF THE CITY

This route for the subway will eliminate business damages, permit of more rapid construction, is less costly than the Yonge Street route, and will, besides, open up a new thoroughfare from Front Street north to Davenport Road.

Tenders to cover the cost of construction were received on November 1st, and the contract was awarded to Messrs. Haney & Miller, the lowest tenderers, for $2,274,781.14, provisional to the ratification by the ratepayers at the New Year's elections of a By-law to authorize this scheme.

Under instructions from the Board of Control we prepared a report giving an estimate of the probable business and traffic over this proposed Teraulay Street route when constructed, and the probable annual increase of such business and traffic. In that report we also outlined a combined tube and surface rapid transit system to embrace the whole City, as shown at page 307, at an estimated cost of $23,000,000.

The estimated cost for construction and equipment of the Teraulay Street subway, based on the acceptance of the tender of Messrs. Haney & Miller, is $5,171,395.96, but considering the matter from an operating view point, it is necessary to include the St. Clair Avenue line, which brings the total cost to $5,497,395.96.

In regard to the revenue to be derived from the operation of this subway, we have assumed that with the probable growth of the City, especially in the northern districts, in 1917 fifty thousand people will be served by the proposed subway.

Taking 300 rides per annum per head, and assuming a four-cent fare, the gross income from passenger traffic would be $600,000. Allowing $20,000 for advertising and news-stand privileges, the total income would be $620,000.

The operating expenses, including maintenance and depreciation, bonds and sinking fund, would amount to $619,895.83.

Page 307 shows the cross section of the proposed Teraulay Street subway.

A detail report of the above was published in Report No. 34 of the Board of Control, and is on file in the City Clerk's Office.

Respectfully submitted.

E. L. COUSINS,
Asst. Engineer.

Sewers, Drains and Special Works

CITY ENGINEER'S DEPT.,
Toronto, December 31st, 1911.

Mr. C. H. Rust, City Engineer:

DEAR SIR,—Herewith I submit the Annual Report, showing in detail the work done under the supervision of this Branch of the Department:

The following sewers were constructed during the year:

9-in. tile pipe	3,018	lin. ft.
12-in. tile pipe	57,618	"
15-in. tile pipe	18,268	"
18-in. tile pipe	12,959	"
24-in. tile pipe	5,231	"
2-ft. x 3-ft. brick	5,945	"
3-ft. circular brick	2,330	"
2-ft. 2-in. x 3-ft. 3-in. brick	1,142	"
Total	106,511	"
or 20.173 miles.		

There are 335.717 miles of sewers in the City.

During the year there were—

449 new manholes built.
100 manholes repaired.
1,052 new gullies built.
51 gullies repaired.
104.34 miles of sewers flushed and cleaned.

DREDGING SEWAGE DEPOSITS OUT OF SLIPS.

Sewage deposits were dredged from the following slips during the year:

Yonge Street sewer outlet	1,095	cubic yds.
Parliament Street "	8,464	"
Church Street "	2,508	"
Sherbourne Street "	4,332	"
Berkeley Street "	5,051	"
Spadina Avenue "	551	"
Total	22,001	"

TABLE No. 1.

SHOWING SEWERS CONSTRUCTED DURING THE YEAR.

Street	From.	To.	Size.	Description.	Length	No. Manholes.	No. Lamp Holes.	No. T. P. Connections	Average Depth.	Soil.	Inspector.	Contractor
			ft. in.									
Main St.	Lancaster Rd.	Dufferin St.	24 in.-18 in.	Tile	2,641	10	10	123	12 69	Clay	R. E. Hayward and T. Mulligan.	J. H. McKnight Con. Co.
Davenport Rd.	Van Horne St.	Davenport Rd.	24 in.	"	1,754	5	4	95	12 70	Sand and clay	R. Patterson	City.
Bathurst St.	Davenport Rd	North city limits	2 ft. x 3 ft.	Brick	2,718	9	14	129	16 85	Clay	F. J. Carrette	Gidson Con. Co.
Dufferin St.	Va. Main St.	Davenport Rd.	2 ft. x 3 ft.	"	1,265	4	4	94	13 91	Clay	H. Johnston	J. Maguire.
Bellevue Ave	A pt. 200 ft. n. of Queen St.	A pt. 1,235 ft. for north.	9 in.	Tile	1,238	4	4	50	12 35	Sand	T. C. Stevenson	Excelsior C. & P. Co.
Lyndhurst Ave.	Austin Terrace	Maitland Rd.	15 "	"	1,806	6	6	96	12 04	Sand and clay	C. North	City.
Glen Rd.	E. Roxborough St.	Dickson Ave.	24 in. 15in. 12in.	"	3,698	14	0	51	12 37	Sand, clay & gravel	H. T. Langley	Orpen Co., Ltd
St. Andrew's Gdns.	Spadina Ave.	Manchester Ave.	15 in.	"	1,441	5	0	93	11 59	Sand and clay	A. Frasca	City.
Chester Ave	Dundonth Ave.	North end	15 in. & 12 in.	"	1,446	5	0	67	10 26	Sand and loam	J. C. Lucas	National Con. Co.
Prust Ave.	1st Lane north of Ivy Ave	1st Lane north of Gerrard St.	12 in.	"	1,046	5	0	67	10 26	Sand and loam	J. C. Lucas	National Con. Co.
Main St.	St. John's Place	S. s. Bolar St.	9 "	"	420	3	0	27	7 77	Sand	J. McCullough	Wm. Bushel
Drummond Rd	Castle Frank Ave.	To the southern tp. branch, and on the northern branch from south lane of Lot 4 south limit of Lot 11.	12 "	"	650	4	0	50	11 62	Clay	R. Kerr	J. F. Connolly
Caswell Ave.	Queen St.	Gerrard St. running west	24 in. & 18 in.	"	2,476	10	8	149	30 62	Clay	C. Knight and W. Bottrell.	City
Warren Rd	Heath St.	Lonsdale Ave	12 in.	"	779	2	0	47	11 39	Clay	C. Curtis	City.
Cheltenham Ave	Greenwoods Ave	A pt. 240 ft. west	12 "	"	446	2	0	35	10 42	Sand and clay	C. Farquhar	National Con. Co.
Sims St	Lyndhurst Ave.	Wells Hill Rd.	12 "	"	488	1	0	10	11 63	Clay	C. North	City.
Summerhill Gardens	Summerhill Ave.	Mt. Pleasant Rd.	12 "	"	1,254	6	0	66	11 12	Sand	J. McCullough and Cousins.	H. Excelsior C. & P. Co.
Bloomfield Ave	Greenwoods Ave.	A pt. 230 ft. west	12 "	"	299	2	0	20	10 65	Sand	J. C. Lucas	National Con. Co.
Ivy Ave.	Greenwoods Ave	A point 200 ft. west	12 "	"	295	1	0	12	9 88	Sand	J. C. Lucas	"
Dublin Ave	Christie St.	Clinton St.	12 "	"	267	2	0	10	11 68	Clay	R. Kerr	J. F. Connolly.
St. Clair Ave	Spadina Ave. (Continued)	North of Wallmer) Rd.	15 "	"	196	2	0	21	9 23	Clay	C. North	City
Wilmer Rd.	St. Clair Ave	North City limits										
Empire Ave	Eastern Ave.	Queen St.	12 "	"	1,290	5	0	72	5 55	Clay	J. Douglas	E. Axworthy.
Humbaug Ave	Main St	Davenport Rd.	15 in. 12 in.	"	1,354	5	4	80	12 12	Clay & run. sand	H. Johnston	J. H. McKnight Con. Co
Ivy Ave.	A pt. 200 ft. w. of Greenwoods Ave	1 Lane E. of Lot 177	12 in.	"	566	3	0	36	12 62	Sand	T. Fairhurst and S. F. McKown	"
Bloomfield Ave	Prust Ave	A pt. 250 ft. n. of Greenwoods Ave	12 "	"	446	1	0	34	12 34	Sand and clay	J. C. Lucas	National Con. Co.
Antler Ave	Symington Ave.	A point 125 ft. east.	12 "	"	158	2	0	8	11 92	Sand and gravel	R. Kerr	J. F. Connolly.
Meadow Ave.	Dundonth Ave.	North end	15 in. 12 in.	"	1,450	3	0	76	12 47	Clay	C. Curtis	City
Page Ave	Danforth Ave.	North City limits	18 in.	"	1,473	5	0	87	13 62	Retaining sand	R. Patterson	"
Spadina Rd.	St. Clair Ave	North City limits	15 "	"	193	1	0	6	12 71	Clay	C. North	"
Dickson Ave and Douglas Drive	Main St	Summerhill Ave	18 "	"	934	4	0	72	14 48	Sand and clay	J. C. Lucas	National Con. Co.
Waverley Rd	A pt. 200 ft. north of Queen St.	N. limit of Lot 48, Plan M 252.	9 "	"	1,200	4	0	86	13 52	Sand	T. C. Stevenson	Excelsior C. & P. Co.
Cheltenham Ave.	Prus. Ave.	A pt. 400 ft. w. of Greenwoods Ave	12 "	"	278	1	0	20	11 27	Sand and clay	C. Farquhar	National Con. Co.
Westmoreland Ave	Main St.	Davenport Rd.	15 in. & 12 in.	"	1,376	5	4	102	11 62	Clay	F. Mangan	J. H. McKnight Con. Co.
Beaconsfield, Strathcona and Westbourne Aves	Dundundas Road	refuse sewer.	12 in.	"	190	1	0	0	0 00	Clay	C. North	City.
Awde St.	Brock Ave	Dufferin St.	12 "	"	300	2	0	15	12 48	Sand	T. C. Stevenson	Excelsior C. & P. Co.
Bartlett Ave.	Main St.	Davenport Rd.	15 in. 12 in.	"	1,296	5	4	102	12 24	Sand and clay	C. Farquhar	Orpen Co., Ltd.
Ellen St.	North side Gdns.	Summerhill Ave.	18 in.	"	510	1	0	8	13 18	Clay & run sand	J. McCullough	Excelsior C. & P. Co.
Pretoria Ave.	Dan Mills Rd.	Silverbeck St.	12 in.	"	349	2	0	16	13 15	Sand and clay	C. North	City.
Dartford Rd.	Sarah St	1st Lane west	12 "	"	281	2	0	16	8 44	Clay	A. Frasca	"
Summerhill Ave.	W. s. Glen Rd.	E. s. Spadina Ave.	15 in. 12 in.	"	947	3	0	48	12 59	Sand and clay	R. Kerr	J. F. Connolly.
Myrtle Ave.	Leslie St.	Jones Ave	12 in.	"	850	3	0	49	9 02	Sand	R. Robins	National Con. Co.
Barrett Ave.	Edna St.	A pt. 183 ft. north	12 "	"	183	0	0	9	5 57	Sand	J. Douglas	E. Axworthy.
Preston Ave.	Sarah St.	East Mills Rd	12 "	"	284	2	0	16	11 23	Clay	A. Frasca	City
Walker Ave.	Campbell Ave.	G. T. R.	12 "	"	348	1	0	20	9 94	Sand	Wm. Bushel	Wm. Bushel
Kenneth Ave	Runnie St.	A pt. 400 ft. west	12 "	"	446	2	4	34	10 39	Sand	T. C. Stevenson	Excelsior C. & P. Co.
Davenport Rd.	Perth Ave.	Laughton Ave	12 "	"	206	1	0	21	11 73	Sandy loam	W. W. Moss	Wm. Bushel
Junction Rd.	Cawthra Ave.	Weston Rd.	12 "	"								
Weston Rd.	Junction Rd.	A pt. 300 ft. s. of St. Clair Ave.)	12 "	"	1,069	7	0	76	12 03	Sand	W. W. Moss and J. Douglas	E. Axworthy.
Shaw St.	Dupont St.	C. P. R.	18 in.	"	260	1	0	18	13 02	Clay	H. Johnston	National Con. Co.
Douglas Drive.	Standish Ave	A point 100 ft. e. of Astley Ave.	15 in. & 12 in.	"	468	2	0	30	8 47	"	H. T. Langley	Orpen Co., Ltd.
Avoca Ave	Hoschill Ave	St. Clair Ave	12 in.	"	756	0	0	41	10 91	"	T. C. Stevenson	Excelsior C. & P. Co.
Astley Ave	Douglas Drive.	North City limits	12 "	"	1,062	5	0	79	10 72	"	J. Lucas and J. McCullough.	Mc Excelsior C. & P. Co.
Pleasant Blvd.	Avoca Ave	West end.	12 "	"	680	2	0	40	10 16	"	J. McCullough	Excelsior C. & P. Co.
Edgewood Ave.	Summerhill Ave	North end	12 "	"	435	4	0	32	12 59	Sand and clay	J. Lucas	National Con. Co.
Dewson Ave	Dundas St.	Lisbon St.	12 "	"	426	2	0	32	10 78	Clay	W. W. Moss	F. Axworthy.
Garnock Ave	Logan Ave	Broadview Ave	12 "	"	800	4	0	50	10 77	Sand and clay	"	"
Loudon St.	Markham St.	First Lane east of Markham St.	12 "	"	178	2	0	6	10 22	Clay	A. Frasca	City.
Bayview Ave.	Nina St.	St. Clair Ave	12 "	"	1,230	4	4	76	14 80	Sand and clay	R. Kerr	J. F. Connolly
Vaughan Rd.	Bathurst St.	North City limits	12 "	"	1,200	5	0	60	13 43	"	H. Johnston	National Con. Co.
Nina St.	Bathurst St.	Mulgrave Rd	15 "	"	799	2	4	35	11 74	"	R. Kerr	J. F. Connolly
Wells Hill Ave.	Nina St.	Melgund Rd	12 "	"	769	4	0	50	13 24	"	"	"
Symington Ave.	A point 500 ft. s. of Bloor St.	Nanking Rd.	12 "	"	376	1	0	26	6 85	Wet sand.	A. Jackson	City.
Dufferin St.	Davenport Rd.	St. Clair Ave	2 ft. x 3 ft.	Brick	1,902	7	11	121	16 87	Sand and clay	H. T. Langley	Orpen Co., Ltd.
Shaw St.	C. P. R.	18 in.	Tile	1,917	4	4	83	13 04	Clay	T. C. Stevenson	J. H. McKnight Con. Co.
Morley Ave.	A point 200 ft. n. of Queen St.	Applegrove Ave.	12 "	"	714	4	0	42	10 77	"	T. Mudgan	J. H. McKnight Con. Co.
Markham St.	St. Clair Ave	North City limits	15 "	"	294	1	2	6	11 39	"	R. Kerr	J. F. Connolly
Kenwood Ave.	St. Clair Ave	North City limits	15 "	"	294	1	2	6	10 71	"	"	"
St. Clair Ave	Bathurst St.	Kenwood Ave.	18 in. & 12 in.	"	984	4	0	45	13 43	"	C. North	City
Wedgewood Ave.	Dundas Ave.	North City limits	12 in.	"	1,407	4	4	97	11 46	"	R. Johnston	J. Maguire.
Cowly Ave	Queen St	A point 920 ft. n.	12 "	"	955	4	4	65	5 47	"	T. Mudgan.	"
Campbell Ave.	Baron St.	South end	12 "	"	600	3	2	32	8 63	Wet sand.	R. Kerr	Excelsior C. & P. Co.
Strathcona Ave	Pape Ave.	East end	12 "	"	650	3	3	38	11 89	"	H. Johnston	"
Rosebrugh Ave	Rushton Ave	North end	12 "	"	290	3	0	19	9 59	Sand	C. North	"
Queen Victoria Ave	Leslie St	East end	12 "	"	600	3	0	34	10 62	"	F. J. Carrette.	J. F. Connolly
Marchmount Rd	Shaw St.	Davenport Rd.	12 "	"	708	5	2	44	10 91	Sand and clay	J. H. Taylor	Orpen Co., Ltd.
Robhaven Ave	Rose Place	North end	12 "	"	412	2	0	18	8 19	Sand.	R. Johnston	National Con. Co.
Withrow Ave	Pape Ave.	A point 680 ft. e.	12 "	"	335	2	0	18	12 67	"	R. Kerr	Excelsior C. & P. Co.
Bradd St.	Dundas St.	West end	12 "	"	360	3	0	10	8 39	"	H. Johnston	National Con. Co.
Regal Rd	Bloor St.	Dufferin St.	12 "	"	611	2	2	53	12 76	Clay	T. C. Stevenson	Orpen Co., Ltd.
Westmount Ave.	Regal Rd.	A point 450 ft. n.	12 "	"	593	2	2	32	12 71	Sand	T. Mudgan	National Con. Co.
Dufferin St.	Dundas St	A point 240 ft. n.	12 "	"	216	1	0	16	12 66	"	H. Johnston	"
Ernest Ave.	Perth Ave.	A point 125 ft. e.	12 "	"	141	2	0	9	11 34	"	R. Kerr	Excelsior C. & P. Co.
Dufferin St.	St. Clair Ave	A point 600 ft. n.	12 "	"	569	2	0	34	11 14	"	C. Hockey	City
Herman Ave	Ritchie Ave.	North end	12 "	"	373	2	0	14	6 23	"	C. North	"
Regina Ave	Rose Place	A point 125 ft. e.	12 "	"	315	1	0	16	10 91	Clay	T. Mudgan	"
Winona Ave.	Queen St.	Williamson Rd	12 "	"	1,160	4	0	72	11 56	Sand.	R. Patterson	City.
Lane first north of College St.	Parkway Ave	West end of Columbus Ave.	12 "	"	428	3	1	6	8 13	"	R. Patterson	"
Salem Ave	Main St	Davenport Rd.	12 in. & 15 in.	"	1,401	5	4	108	11 45	"	T. Madgan	J. Maguire.
Hook Ave.	Oakville Ave.	Westall Rd.	12 in.	"	676	2	1	48	9 41	"	J. Douglas	E. Axworthy.
Campbell Ave	Rowe Ave.	C. P. R.	12 "	"	430	2	0	24	12 00	Clay	H. T. Langley	Orpen Co., Ltd.
Thwaites Ave.	Dufferin St.	Tyndall Ave	12 "	"	419	2	0	28	10 95	"	A. Birks	City
Temple Ave.	Dufferin St.	Tyndall Ave	12 "	"	423	2	0	28	12 51	"	Wm. Bottrell	"
Danforth Ave	Pape Ave.	Leslie St.	18 "	"	2,100	8	0	120	12 63	"	R. Patterson	"
Ramsford Rd	Bloor St.	North end	15 in. & 12 in.	"	1,290	4	0	70	10 77	Sand.	Wm. Bottrell	"
College St	Lansdowne Ave.	St. Helens Ave.	12 "	"	274	2	0	12	8 17	"	A. Jackson	"
Pauline Ave	Bloor St	A point 989 ft. n.	12 "	"	1,030	5	0	63	11 61	Clay	A. Frasca	"
Dixon Ave.	Keele St.	A point 125 ft. e. of Ramsford Rd.	12 "	"	426	2	0	26	10 83	Sand	Wm. Bottrell	"
Canning Ave	Moscow Ave	Carlaw Ave	12 "	"	301	1	0	14	10 04	"	W. W. Moss	E. Axworthy
Gibson Ave.	A pt. 391 ft. w. of Yonge St.	A pt. 247 ft. for. w	12 in.	"	100	1	0	6	7 81	Clay	A. Jackson	City.
Uxbridge Ave.	Davenport Rd.	Connolly St.	12 in. & 15 in	"	714	4	0	38	11 65	Sand and clay	E. Howse	"
Lane, 1st w. Yonge St.	Yorkville Ave.	1st lane south.	12 in.	"	209	2	0	7	8 63	Clay	A. Jackson	"
Lane, 1st w. Spadina Ave.	Sussex St.	A pt. 180 ft. north	12 "	"	213	1	0	9	8 89	Hard pan.	Wm. Bottrell	"
Gillespie Ave.	Davenport Rd.	Connolly St.	12 in. & 15 in.	"	725	8	0	50	8 58	Sand and clay	E. Howse	"
Playter Cres	Playter Estate	Jackson St. running north	12 in.	"	924	6	0	55	12 93	Sand	C. Curtis & A. Frasca	"
Hutchinson Ave.	Playter Cres	Butternut St.	12 "	"	678	3	0	47	13 16	"	A. Frasca	"
Christie St.	C. P. R.	Tyrell Ave	2 ft. cir.	Brick	2,536	8	10	125	18 13	Sand and clay	H. T. Langley	J. F. Connolly
Rhodes Ave.	200 ft. n. of Danforth Ave	1 St	18 in.	Tile	2,229	7	0	147	12 03	Clay	T. C. Stevenson	Orpen Co., Ltd.
Davenport Rd.	Shaw St	100 ft. w. of Marchmont Rd.	15 "	"	678	2	2	49	13 20	Sand and clay	R. T. Langley	"
Macauley Ave.	Parth Ave	West end	12 "	"	769	3	2	36	12 05	Sand	Wm. Bottrell	City
Northcliffe Boul.	Regal Rd.	300 ft. n. south	12 "	"	333	1	0	24	11 58	"	T. Madgan	National Con. Co.
Melgund Rd.	A pt. 328 ft. e. of Lyndhurst Ave.	80 ft. e. of w. St. line of Lyndhurst Ave.	12 "	"	910	3	0	48	12 21	"	H. T. Langley	Orpen Co., Ltd.
Glen Rd	Summerhill Ave	C. P. R.	12 "	"	780	3	4	50	14 42	"	T. Madigan	National Con. Co.
Laughton Ave.	Davenport Rd.	Connolly St.	15 "	"	445	2	0	23	10 02	Sand and clay	A. Frasca	City.
Eaton Ave	Danforth Ave	N. City limits	15 in. & 12 in.	"	1,440	5	0	97	11 52	Hard pan.	R. Patterson	"
Kippendavie Ave	Queen St	Lake Ave	15 " & 12 "	"	1,340	3	0	70	9 43	Sand and clay	Wm. Bottrell	"
Baxter Ave	Dufferin St.	400 ft. west.	12 in.	"	445	2	4	30	11 56	Clay	T. C. Stevenson.	E. Axworthy.
Lane, 1st e. of Bathurst Ave.	Westminster Ave	South end	9 "	"	160	1	0	0	7 54	"	A. Frasca	City.
Standish Ave	S. s. Douglas Drive	Astley Ave	12 "	"	825	3	4	58	11 37	"	T. Madgan	National Con. Co.
Don Crest Rd.	Dartford Rd	North end	12 "	"	190	2	0	10	5 97	"	A. Frasca	City.
St. Clarens Ave	Rowe Ave	Davenport Rd	15 "	"	1,830	6	6	108	12 80	"	E. Howse	Orpen Co., Ltd.
Auburn Ave	Dufferin St	270 ft. west	12 "	"	428	2	5	23	13 86	Sand	T. C. Stevenson.	E. Axworthy.
Mallon Ave.	Jane Ave	Bettercourt Ave	12 "	"	574	3	2	29	10 05	Clay	Wm. Bottrell	City.
Hiberna Ave.	Laughton Ave	East end	12 "	"	247	2	0	8	10 63	Sand and clay	A. Frasca	"
Curzon St.	Myrtle Ave	300 ft. south	12 "	"	854	2	2	37	10 81	Sand	T. Madigan	National Con. Co.
Brock Ave	930 ft. n. of Bloor St.	North end	12 "	"	330	2	0	24	11 51	Clay	A. Frasca	City.
Bertmount Ave	S. R. of lot No. 20	N. R. of lot No. 13	12 "	"	310	2	0	19	10 06	"	Wm. Bottrell	"
Coady Ave.	930 ft. n. of Queen St.	Mallon Ave	12 "	"	262	0	0	14	8 47	"	"	"
Keele St	Bloor St	546 ft. north	12 "	"	620	2	0	30	12 92	Sand	H. Johnston & H. Kerr	E. Axworthy
Tyrell Ave.	Va. Breadale Ave	West end	24 in. x 18 in. x 12 in.	"	In progress						T. C. Stevenson.	"
Bird Ave	Dufferin St	370 ft. west	12 in.	"	491	1	0	24	13 84	Sand.	T. Madigan	National Con. Co.
Gerrard St. (to drain pond.	Rhodes Ave	Ashdale Ave	12 "	"	850	2	0	9	7 58	Clay	Wm. Bottrell	City.
Ridley Gardens	Gardin Ave	North end	12 "	"	400	2	0	18	10 50	"	"	"
Indian Trail	Indian Rd	Lake	12 "	"	491	2	0	20	9 60	Sand.	T. Madigan	National Con. Co.
Hillcrest Ave	Bathurst St.	Asbury Ave.	12 "	"	327	2	0	12	15 76	Sand and clay	H. Kerr	J. F. Connolly
Alloway Ave	Hillcrest Ave	Nina St	12 "	"	580	2	2	20	12 56	"	"	"
Waverley Rd	Queen St	Lake	12 in. & 15 in.	"	1,518	4	0	46	4 26	Sand	A. Frasca	City.
Davenport Rd.	Centre of St. Clarens Ave	Lansdowne Ave. n. Ave. south.	18 in.	"	In progress						H. Johnston	J. F. Connolly
Lansdowne Ave	Davenport Rd.	St. Clair Ave										
Christie St	Tyrell Ave	St. Clair Ave	18 in. & 24 in.	"							R. Patterson	City.
Russell Hill Rd	S. s. Lonsdale Ave	A pt. 212 ft. north	15 in.	"	100	1	0	10	14 20	Sand and clay	A. Frasca	"
Applegrove Ave.	Morley Ave	Ashdale Ave										
Ashdale Ave	Applegrove Ave.	Fairford Ave	24 in & 15 in	"	In progress						F. J. Carrette.	J. F. Connolly.
Braemidale Ave.	S. s. Tyrell Ave	St. Clair Ave	24 in & 18 in	"							T. Madigan.	National Con. Co.
Connaught Ave	Eastern Ave	Queen St	12 in.	"							R. Kerr	J. H. McKnight Con. Co.
Jenlon Ave	Pape Ave	East end	12 "	"							A. Frasca	City.
Wilton Ave	Don	Sherbourne St	5 ft. 9 in. x 5 ft 4 in	Brick							H. Johnston	Gidson Con. Co.
St. Clair Ave	Avenue Rd	Dunvegan Rd	18 in.	Tile							C. W. North	Excelsior C. & P. Co.
Dagmar Ave	Jones Ave	Morjoy Ave	24 "	"							E. Howse	Orpen Co., Ltd.
Toronto Junction	Main Sewer, section No. 1	24 in. x 4 ft	Brick								Wm. Bottrell	City
		3 in. x 5 ft. cir.										
Toronto Junction	Main Sewer, section No. 2	36 in.	Concrete								W. W. Moss	Orpen Co., Ltd
Fourmost Creek Extension		5 ft. 6 in. cir.	Brick								H. T. Langley	J. Wagner
		5 ft. 2 in. cir.										
Symington Ave.	Cloud Ave.	Dowling Ave	18 in. & 24 in.	Tile	1,365	6	0	0	15 25	Clay	A. Birks & C. North	City
Springhurst Ave	Cloud Ave.	Dowling Ave	18 in. & 24 in.	"	837	4	0	0	12 75	"	Wm. North	"
Cliff Rd	Dowling Ave.	Wilson Ave	2 ft. 2 in. x 3 ft. 3 in.	Brick	1,142	3	0	0	13 50	"	E. Howse	"

TABLE No. 2.

SHOWING SEWERS CONSTRUCTED BY DAY LABOR DURING THE YEAR.

Street.	From.	To.	Size.	Description.	Length.	City's Tender.	Next Lowest Tender.	Total cost of work exclusive of interest.	Difference between actual cost and lowest Contractor's Tender.	
									Loss.	Gain.
						$ c.	$ c.	$ c.	$ c.	$ c.
Dovercourt Rd.	Van Horne St.	Davenport Rd.	24 in.	Tile	1,754	5,490 00	5,641 00	6,496 86	855 86	
Lyndhurst Ave.	Austin Terrace.	Melgund Rd.	15 "	"	1,606	No Tender				
Chester Ave.	Danforth Ave .	North end.	15 in. & 12 in.	"	1,441	"				
Coxwell Ave.	Queen St.	Gerrard St., running west.	24 in. & 18 in.	"	2,476	6,210 00	6,665 00	8,034 54	1,369 54	
Warren Rd.	Heath St	Lonsdale Ave.	12 in.	"	770	No Tender				
Nina St.	Lyndhurst Ave.	Wells Hill Rd.	12 "	"	400	"				
St. Clair Ave.	Spadina Rd.	Centre of Walmer	15 "	"	496	716 00	793 00	1,038 95	245 95	
Walmer Rd.	St. Clair Ave.	North City limits								
Moscow Ave.	Danforth Ave.	North end	15 in. & 12 in.	"	1,450	No Tender				
Pape Ave.	Danforth Ave.	North City limits	18 in.	"	1,473	"				
Spadina Rd.	St. Clair Ave.	North City limits	15 "	"	193	"				
Dewson St. Overflow	Rusholme Rd. relief sewer.		12 "	"	190	"				
Pretoria Ave.	Don Mills Rd.	Ellerbeck St.	12 "	"	340	"				
Dartford Rd.	Sarah St.	1st lane west	12 "	"	281	"				
Pretoria Ave	Sarah St.	Don Mills Rd.	12 "	"	284	"				
London St.	Markham St.	1st lane e. of Markham St.	12 "	"	170	330 00	343 00	334 12		8 88
Symington Ave.	A pt. 500 ft. s. of Bloor	Sterling Rd.	12 "	"	376	445 00	1,047 00	398 22		648 78
St. Clair Ave.	Bathurst St.	Kenwood Ave.	18 in. & 12 in.	"	963	2,140 00	2,145 00	2,377 95	232 95	
Dufferin St.	St. Clair Ave.	A pt. 500 ft. north.	12 in.	"	559	810 00	943 00	726 90		216 10
Herman Ave.	Ritchie Ave.	North end	12 "	"	373	360 00	379 00	286 15		92 85
Royce Ave.	St. Clarens Ave.	Emerson Ave.	12 "	"	315	460 00	488 00	628 83	140 83	
Lane 1st n. of College	Parkway Ave.	W. end of Columbus	12 "	"	428	590 00	612 00	486 98		125 02
Thorburn Ave.	Dufferin St.	Tyndall Ave.	12 "	"	419	No Tender				
Temple Ave.	Dufferin St.	Tyndall Ave.	12 "	"	423	"				
Danforth Ave.	Pape Ave.	Leslie St.	18 "	"	2,100	4,300 00	4,720 00	4,886 00	166 00	
Rainsford Rd.	Queen St.	North end.	15 in. & 12 in.	"	1,200	No Tender				
College St.	Lansdowne Ave.	St Helens Ave.	12 in.	"	274	"				
Pauline Ave.	Bloor St	A pt. 989 ft. north.	12 "	"	1,030	"				
Dixon Ave.	Woodbine Ave.	A pt. 125 ft. e of Rainsford Rd.	12 "	"	426	"				
Gibson Ave.	A pt. 390 ft. w. of Yonge St.	A pt. 100 ft. fur. west	12 "	"	100	"				
Uxbridge Ave.	Davenport Rd.	Connolly St.	12 in. & 15 in.	"	714	"				
Lane 1st w. of Yonge	Yorkville Ave.	1st lane south	12 in.	"	200	"				
La'e 1st w. of Spadina	Sussex St.	A pt. 180 ft. north	12 "	"	213	"				
Gillespie Ave.	Davenport Rd.	Connolly St.	12 in. & 15 in.	"	725	"				
Playter Cres.	Ellerbeck Ave.	Jackman St., running north.	12 in.	"	924	"				
Hutchinson Ave.	Playter Cres.	Butternut St	12 "	"	678	"				
Macauley Ave.	Perth Ave.	West end.	12 "	"	769	1,400 00	1,548 00	1,382 77		165 23
Laughton Ave.	Davenport Rd.	Connolly St.	15 "	"	445	No Tender				
Eaton Ave.	Danforth Ave.	North City limits	15 in. & 12 in.	"	1,440	2,825 00	2,936 00	2,326 90		609 10
Kippendavie Ave.	Queen St.	Lake	15 " & 12 "	"	1,540	No Tender				
Lane 1st e. of Roncesvalles Ave.	Westminster Ave.	South end	9 in.	"	160	"				
Don Crest Rd.	Dartford Rd.	North end	12 "	"	190	215 00	226 00	259 83	33 33	
Mallou Ave.	Jones Ave.	Bertmount Ave.	12 "	"	574	No Tender				
Hibernia Ave	Laughton Ave.	East end	12 "	"	237	"				
Brock Ave.	930 ft. n. of Bloor St.	North end	12 "	"	330	"				
Bertmount Ave.	S. limit of lot No. 20	N. limit of lot No. 13	12 "	"	319	"				
Coady Ave.	920 ft. n. of Queen St.	North end	12 "	"	262	"				
Gerrard St. (to dram pond.)	Rhodes Ave.	Ashdale Ave.	12 "	"	350	"				
Ridley Gardens	Garden Ave.	North end	12 "	"	460	550 00	574 00	533 47		40 53
Christie St.	Tyrell Ave.	St. Clair Ave.	18 in. & 24 in.	"	In Progress.					
Waverley Rd.	Queen St.	Lake	12 " & 15 "	"	1,518	No Tender				
Russell Hill Rd.	S. s. Lonsdale Ave.	A pt. 213 ft. north.	15 in.	"	160	"				
Lipton Ave.	Pape Ave.	East end	12 in.	"	In Progress.					
Toronto Junction	Main Sewer, section	No. 1	2 ft. 10 in. x 4 ft. 3 in. 3 ft. Cir.	Brick	"	"				
Springhurst Ave.	Close Ave.	Dowling Ave	18 in. & 24 in.	Tile	1,365	No Tender				
Springhurst Ave.	Close Ave.	Cowan Ave.	18 " & 24 "	"	822	"				
Cliff Rd.	Dowling Ave.	Wilson Ave.	2 ft. 2 in. x 3 ft. 3 in.	Brick	1,142	"				

REPORT OF PRIVATE DRAIN DEPARTMENT FOR YEAR ENDING DECEMBER 31ST, 1911.

	Lineal Feet.			Total.	Lowered	Repaired	Flushed.
	6-in.	9-in.	12-in.				
January	2,219	198	.....	2,417	.....	6	2
February	3,615	174	.....	3,789	.....	3	2
March	7,586	1,107	.....	8,693	2	7	2
April	8,008	670	33	8,711	.....	7	4
May	9,512	810	.....	10,322	3	9	3
June	9,047	1,133	.....	10,180	2	5	3
July	9,803	1,069	.....	10,872	.....	11	6
August	11,273	1,246	.....	12,519	4	4	2
September	9,558	1,674	.....	11,232	6	8	3
October	10,877	1,427	33	12,337	.....	13	3
November	7,961	1,169	119	9,249	.....	8	5
December	4,411	789	.....	5,200	4	6	6
	93,870	11,466	185	105,521	21	87	41

Total—105,521 lineal feet=20 miles.

SEWERS CONSTRUCTED DURING THE YEAR.

In Table No. 1 will be found a list of streets on which sewers were constructed during the year. From this it will be seen that in all 140 sewers have been laid and 13 are at present in progress. This list, exclusive of those in progress, represents a total mileage of 20.173, or an increase over the year of 1910 of 3.193 miles.

Table No. 2 gives a list of streets upon which sewers were constructed by day labor. From this it will be seen that 53 sewers have been completed during the year and that there are at present 4 in progress.

BRACONDALE SEWERAGE SYSTEM.

The work of constructing sewers in the district formerly known as Bracondale, which was carried on all last year, was completed in August of this year. The heaviest piece of work in connection with this system was that of a 2-ft. x 3-ft brick sewer on Bathurst Street, from Davenport Road to the north City limits.

WYCHWOOD SEWERAGE SYSTEM.

In June of this year work was commenced on a system of drainage for the district formerly known as Wychwood. In this system the area bounded by Davenport Road, the north City limits, Bathurst Street and Shaw Street, a total of 175 acres, is to be provided with drainage. The main outlet sewer for this district, which is a 3-ft. circular brick sewer on Christie Street, from C. P. R. to Tyrell Avenue, was completed during the year and work was started on the lateral streets dependent upon this as soon as the outlet was provided. We expect that the balance of the streets included in this recommendation will be sewered by next midsummer. A considerable portion of this work was carried out by day labor.

SYSTEM OF SEWERS FOR THE MIDWAY DISTRICT.

During the year sewers were laid on Rhodes Avenue, Coxwell Avenue and a section of Morley Avenue, these streets being in what was formerly known as the Midway District. Surveys have been made and levels taken of all the other streets in this district, with a view to sewering the same, and it is our intention to make a recommendation for a system which will include the balance of the streets in this district, and as soon as the plans of some of the projected subdivisions are registered, we will be in a position to make the necessary recommendations to the Committee on Works.

OAKWOOD DRAINAGE SYSTEM.

During the year a recommendation for a system of sewers for the district formerly known as Oakwood, bounded by Davenport Road, north City limits, Dufferin Street and Shaw Street, was made. In making this recommendation, provision was made by designing the outlet sewer large enough so that the northern portion of Earlscourt from Hope Street to the north City limits could eventually be provided with drainage. This recommendation has now passed all the necessary stages, and we hope to have the entire system laid during the incoming year.

SYSTEM OF DRAINAGE FOR THE EARLSCOURT DISTRICT.

During the year surveys were made and levels taken with a view to obtaining the necessary information for making a recommendation for a system of sewers for the district formerly known as Earlscourt, extending from Davenport Road to Hope Street, and from Dufferin Street to the Northern Railway Tracks. Plans of all the streets in this

Roots in Dowling Avenue Sewer, North of Springhurst.

district have been made and a scheme outlined whereby we are at present in a position to make the necessary recommendation to the Committee on Works. The nearest existing sewers are at present inadequate to provide a sufficiently large outlet for the storm water which will reach them from this district. It is our intention, however, as soon as our recommendation passes the necessary stages, to connect the sewers laid in this district with the existing sewers south of Davenport Road in such a way as will provide sanitary drainage for the district in the meantime. Provision will be made in the recommendation for a sufficiently large outlet for the storm water.

DRAINAGE FOR WEST TORONTO.

During the year a second recommendation for an outlet sewer for the southern and south-western portion of Toronto Junction was made, and work was commenced on one section in September, and on another section in December, and work will be hurried along so that this outlet may be provided as soon as possible. Section No. 1, from the intersection of King and Queen Streets up Roncesvalles Avenue to Marion Street and along Marion Street to Sunnyside Avenue, is being done by day labor. On account of the street car tracks and other obstructions, it was deemed advisable to carry out this work by tunneling rather than by open cut in order to inconvenience the people as little as possible.

DRAINAGE FOR EAST TORONTO.

During the year a recommendation for a sewer to provide an outlet for sewers in the district formerly known as East Toronto was made, the cost of this work being assessed against all the streets which will eventually be benefited. Contracts for three sections of this work have been let, and we intend to have the work carried on during the winter. Recommendations are now being prepared for the construction of sewers on the several streets in this district, which will have to be drained into this outlet.

RECONSTRUCTION OF SEWERS FOR THE GRADE SEPARATION.

The sewers which crossed the G. T. R. between Sunnyside Avenue and Strachan Avenue proved to be the greatest obstruction in the proposed grade separation. In 1910 a system of sewers was designed so as to give the G. T. R. a clear right-of-way for their construction. The scheme consisted of the reconstruction of the existing sewers and syphons under the proposed grade separation. Dufferin Street sewer was replaced by a syphon, the construction of which was very dangerous

under the existing conditions. The Springhurst Avenue sewer was reconstructed so as to concentrate the sewage at one syphon at Close Avenue. The Wilson Avenue sewer was also syphoned under the tracks, and a new outlet along Cliff Road to Dowling Avenue had to be constructed. All of this work was commenced in the fall of 1910, and completed in the spring of 1911.

WOODBINE SEWERAGE SYSTEM.

The Sewage Disposal System at the foot of Woodbine Avenue continues to work satisfactorily. The tanks were cleaned out once during the year, when 215 cart loads of material were removed. It was found necessary to clean out the sedimentation basins twice, about 50 cart loads of material being removed on each occasion. The distributing pipes in the bacteria beds were found to have clogged, and these were taken up and relaid, and the slag for a depth of 18 inches turned over. It is our intention, during the incoming year, to replace the existing 4-inch pumps and 7-horse power motors at the Woodbine Avenue Pumping Station with 6-inch pumps and 15-horse power motors, and to replace the present pumps at the Kenilworth Avenue Station with those taken from the Woodbine Avenue Station.

GENERAL SEWER REPAIRS.

Under this heading, we have nothing special to relate as there were no serious blocks or breaks in the sewers during the year, all the necessary repairs being of minor importance.

STORM SEWERS.

During the last few years the City has grown so rapidly that the existing sewers are entirely too small, the consequence of which is that the older portion of the City is continually flooded during heavy storms or spring freshets. The flooding was so serious that a By-law of $824,400 for the construction of relief sewers was carried by the people. In consequence of this a system of storm sewers was designed, and very good progress has been made with the preparation of the plans. The following relief sewers are now under construction, and will soon be completed:

St. Clair Avenue, from Avenue Road to Dunvegan Road.
Dagmar Avenue, from Jones Avenue to Marjory Avenue,
Broadview Avenue, overflow, which was constructed through Riverdale Park, opposite Langley Avenue.

Wilton Avenue Storm Sewer (Concrete)—Curve at River and Cornwall Streets.

The contract for the Wilton Avenue storm sewer was awarded to the Godson Contracting Co., and very good progress is being made. This sewer runs along Wilton Avenue, from the Don River to Yonge Street, and is designed to relieve the business section of the City.

For the congested part of the City, in the vicinity of Queen Street and Carlaw Avenue to the north, a contract for a relief sewer on Carlaw Avenue, from the Bay to Gerrard Street, has been awarded to Jennings & Ross, contracting firm, and work will start on this very shortly.

The portion of the City north of Bloor Street, from Avenue Road to Christie Street, will be relieved by the storm sewer which is proposed to be constructed along Barton Avenue, with its outlet into the Garrison Creek sewer. The plans for this sewer are prepared, and the contract will be let in the incoming year.

Plans are being prepared for the rest of the system, and contracts will be awarded as soon as possible.

SUNNYSIDE SEWAGE PUMPING STATION FOR DISTRICT WEST OF SUNNYSIDE AVENUE.

The combined sewage of this district is carried down the main sewers on Keele Street and Indian Road to a point where the streets intersect. At this point an overflow chamber separates the storm water, turning it directly into Lake Ontario. The sewage is then carried along the Lake Shore Road to a Pumping Station, discharging at an elevation of one foot below zero lake level into grit chambers, thence into the well of the Pumping Station, the bottom of which is 7½ feet below zero lake level. From this well the sewage is then pumped through an 8-inch cast iron rising main about 650 feet into the King Street sewer, which is at an elevation of 34 feet above zero lake level.

The equipment of this Pumping Station, which has been installed during this year, consists of a duplicate set of pumps and motors. The pumps are single stage horizontal, centrifugal sewage pumps with a 6-inch suction and a 6-inch discharge, having a capacity of 800 U.S. gallons per minute. The motors are 40-h.p., 3-phase, 550-volt, 25-cycle induction motors, having a speed of 750 R. P. M.

The operation of this plant is automatic, and is controlled by a single float in the well. When the well is nearly full this float throws in a switch which operates a small motor driving the vacuum pump.

This pump starts priming the sewage pumps (through a vacuum chamber). In this vacuum chamber a rod is attached to a cast iron float which rises as the air is exhausted, and at a certain point throws in the starters for one of the motors and pulls out the vacuum pump switch. The pumps are kept going until the sewage is within 6 inches from the bottom of the suction pipe, when the float again pulls the switch of the motors and the plant is quiet again until operation is repeated.

Respectfully submitted.

J. D. SHIELDS,
Assistant Engineer, Sewer Division.

Main Drainage System

Mr. C. H. Rust, City Engineer:

DEAR SIR,—I beg to hand you herewith the Annual Report on the work performed by the Main Drainage Works Department in the year 1911. As has been remarked in previous reports, the work was authorized under By-law No. 5767, passed in July of 1908, which provided for the construction of two Intercepting Sewers and their branches, a Sewage Disposal Plant and Outfall Sewer, at an estimated cost of $2,400,000.

Considerable change has taken place in the staff of the Department during the year. It is regrettable that Mr. A. C. D. Blanchard, the former Assistant Engineer, who resigned in July, and who had so ably and conscientiously commenced and carried out the work in his charge, did not remain to enjoy the prospect of the task drawing to a satisfactory close. A few weeks previous to Mr. Blanchard's departure, Mr. Hollingworth, Chief Inspector, also resigned his position on the staff. His duties in connection with the two interceptors have been undertaken by Mr. W. P. Near, while Mr. I. H. Nevitt has been put in charge of the completion of the Sewage Disposal Works. It is the earnest hope of myself and my assistants that the work of the Department should not suffer through these changes, and that the future progress should be as satisfactory as that of the past.

The past year has been, and will prove to be, the most important year in the construction of the Main Drainage System. It has seen the completion (with the exception of a few lineal feet) of the High Level Interceptor proper, the construction of two-thirds of the Low Level Interceptor, the entire completion of the Sedimentation Tanks, Outfall Sewer and Pumping Station substructure, and good progress made on the Pumping Station superstructure. Sixteen contracts were awarded this year, twenty-nine have been under way at different times during the year, with a maximum of thirteen during July and August, for which were required a field staff of engineers and inspectors numbering 32. At this time the number of men the contractors had engaged in the work reached a maximum of 575, and the greatest length of sewer constructed in one week amounted to 947 lineal feet.

HIGH LEVEL INTERCEPTOR.

That portion of the High Level Interceptor, for the construction of which contracts have been let, and which is now all but complete, lies between the Garrison Creek on the west and the Sewage Disposal Works on the east, and might be termed the High Level Interceptor proper. The High Level Extension, which is at present being designed, is the continuation of the above sewer westerly to Springhurst Avenue, with a possible further extension to Roncesvalles Avenue.

It was hoped that this year would see the completion of the High Level Interceptor proper, but, due to the fact that three of the contracts had been awarded to one firm, which was unable, at the last, to handle them, these three have still to be finished. Sections Nos. 2, 3, 6, 7, 8 and 9 have, however, been completed, while of the three above mentioned, Section No. 1 has 87 lineal feet and 2 connections to build, Section No. 4, 2 syphons to build, and Section No. 5, 61 lineal feet, 1 syphon and 5 connections to build. It was found necessary, in order to expedite the progress of Section No. 1, to take a portion of the work out of the contractor's hands and re-let it. This was done, with the satisfactory result that the weekly progress was increased from 30 to 175 lineal feet. Progress on the connections of Section No. 4 was unavoidably slow, since, due to the location of the work at the intersections of Lombard and Jarvis Streets, Lombard and Church Streets, and Adelaide and Yonge Streets, it had to be carried on with the least possible obstruction to the heavy traffic. The postponement of the construction of the Garrison Creek syphon till the winter, in order to avoid the flooding which would have occurred at other seasons of the year, was another factor in retarding the date of completion of the work.

The past year having, as has been noted, been one of gratifying results, has also witnessed the first, and what is hoped will be the only, misfortune in connection with the construction of the system, namely, the failure of that portion of Section No. 2, located on the east bank of the Don River. This is a circular section, 8 feet 9 inches in diameter, built of reinforced concrete and supported on concrete piers, the construction of which was commenced in September, 1910. For a distance of 300 feet, between the east end of the Don Syphon and the old bank of the Don River, the sewer had to be constructed on a filled-in portion of the river bed. The shallow excavation—8 feet at the most—showed a fairly good clay, which, it was estimated, would sustain the weight of the piers upon which the sewer was to be built, and the construction was carried on accordingly. A considerable portion of the invert had

High Level Interceptor, Sec. No. 6—Garrison Creek Bellmouth.

already been constructed before it was noticed that the whole 300 feet of sewer was sinking. Observation showed that all the ground in the immediate vicinity was undergoing a similar change in elevation, and it was realized that any attempt to prevent the sinking of the sewer would have to be postponed till the stability of the ground was restored, and in the meantime the construction was proceeded with. After a study of the conditions it was determined that this peculiar occurrence was due to a combination of circumstances, namely, the placing of the approach of the Wilton Avenue bridge simultaneously with the construction of the Don Syphon across the river. The enormous pressure exerted by the former was forcing the soft underlying ground to seek an outlet into the syphon trench, with the result that the surface layer was forced to settle.

The first crack appeared in the invert of the sewer, about midway between the west end and the bank. This quickly widened, and with the appearance of others, destroyed the continuity of the work. The back filling, which was proceeded with, increased the settlement that already had occurred, which resulted finally in a maximum of three feet.

Reconstruction was commenced on August 15th, 1911, and the work put into the hands of the J. H. McKnight Construction Co., who were the original contractors for the section. It was decided to leave in place and underpin a 100-foot section upon which the maximum settlement was 16 inches, and to tear out and reconstruct the remaining 200 feet. Piles were driven close to the interceptor on both sides at 4-foot centres, the centres of the two piles of each bent being 12 feet 9 inches apart. The process of under-pinning was to cut off the piles 22 inches below the bottom of the sewer and on them to construct a concrete cradle, reinforced at the bottom with 5, 1-in. diameter, round rods. This cradle was 18 inches wide, and extended up to the springing-line of the sewer. When the concrete had set, the forms were removed and the backfilling replaced, great care being exercised with the latter. The task of tearing out the remaining 200 feet of the sewer was a laborious one, due principally to the presence of the steel reinforcement, which consisted of ⅝-inch square rods. Trouble was also occasioned by the proximity of the approach to the Wilton Avenue bridge on the north side of the excavation, which the rain had made very soft, and for the protection of which a row of anchor-piles had to be driven. When the old concrete and brick invert had been removed down to grade a third pile was added at the centre of each bent, and all were cut off 13 inches below the bottom of the new work. These were capped with a concrete beam 15 inches by 18 inches, reinforced with 5 ⅞-inch diameter round rods. In this instance

the invert up to the springing-line and cradle were poured together, and vertical dowels were left protruding at the haunch for bonding the arch. The single ring of brick on the invert was omitted in order to simplify the construction. The new work was set to the original grade and connection made with the under-pinned section (the grade of which was not corrected) in one 25-foot length. The concrete work was completed on December 27th, and after a sufficient interval the backfilling was proceeded with.

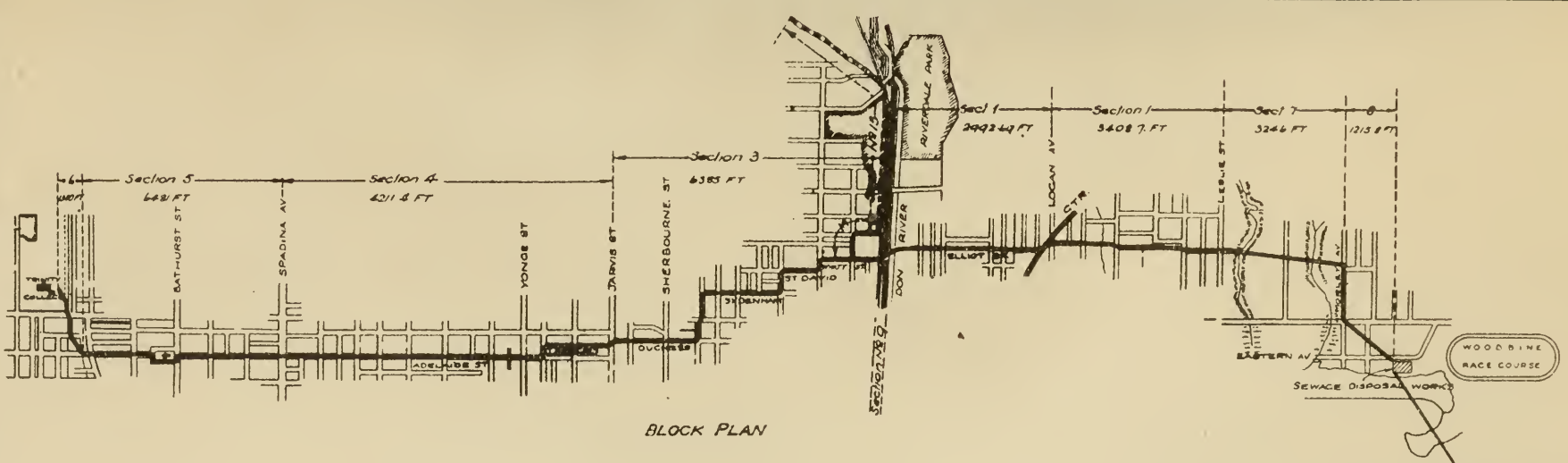
The work necessitated, approximately, the following quantities:

Excavation.....	1,220 cub. yds.	
Piles.....	10,700 lin. feet.	
Concrete, 1, 2, 4.....	1,210 cub. yds.	(tearing out and replacing)
" "	200 "	(placing only)
Steel.....	16.75 tons.	

and the total cost, including contractors' 15 per cent., amounted to $14,712.07.

The Rosedale Creek connection, comprising Sections Nos. 14 and 15, has been designed and the contract for the construction of a portion of it awarded this year. The point of interception is located about 3,000 feet west of the Don River, on the Rosedale Ravine Drive, and the pipe required to connect it with the High Level Interceptor at the corner of River and Mark Streets is 6,600 feet long. It is divided into two sections for the reason that the upper length of 5,700 feet (Section No. 15) is to be in the form of an inverted syphon, for the construction of which 42-inch reinforced concrete pressure pipe are to be used, and the lower 900 feet (Section No. 14) is to be a 3-ft. x 4-ft. 6-in. egg-shape brick gravity sewer. The contract for the pipe for Section No. 15 was awarded this year, and all the pipe manufactured and delivered, although a number have still to be accepted subject to test. The contract for Section No. 14 was also awarded this year, and it is expected that construction will be commenced within a month.

A departure was made in designing the pipe to be laid on curves for the syphon. Since the operation of the syphon would practically depend on the tightness of the joints between the pipes, a special bend was made to be used at the beginning and end of each curve. The standard bend for the curve is made from the straight pipe by depressing one side of the top plate of the mould a sufficient distance to compensate for the difference in distance of the two walls of the pipe from the centre of the curve. To form a true curve with tight joints it will be seen, however, that in making the pipe for the beginning and end of the curve the mould should be depressed only half the distance used on the standard



BLOCK PLAN

CITY OF TORONTO

MAIN DRAINAGE WORKS

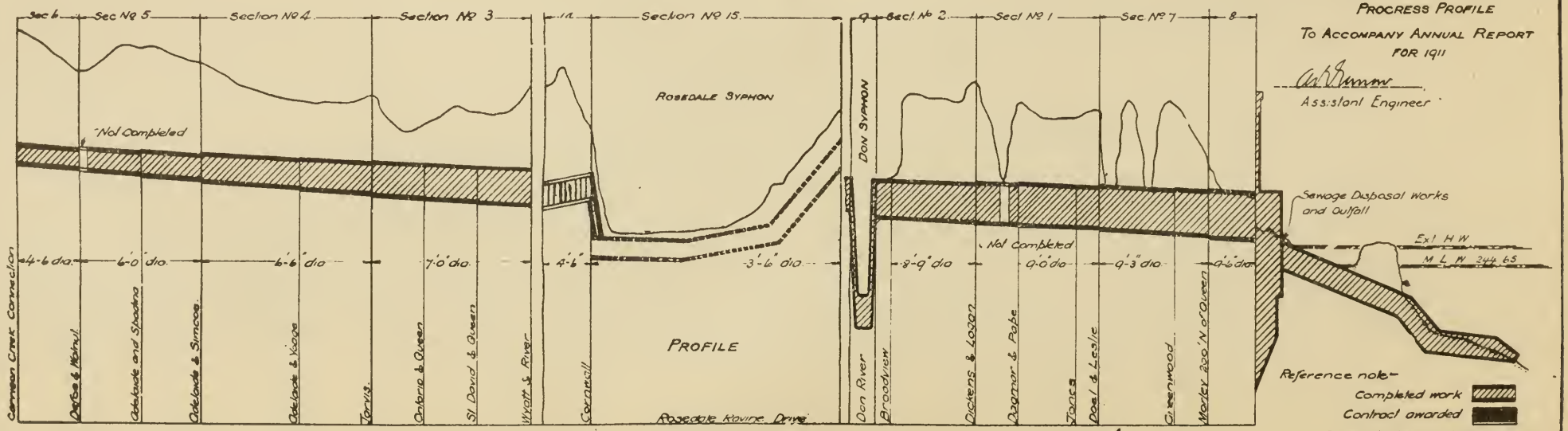
HIGH LEVEL INTERCEPTOR

PROGRESS PROFILE

TO ACCOMPANY ANNUAL REPORT FOR 1911

A. W. Summer

Assistant Engineer



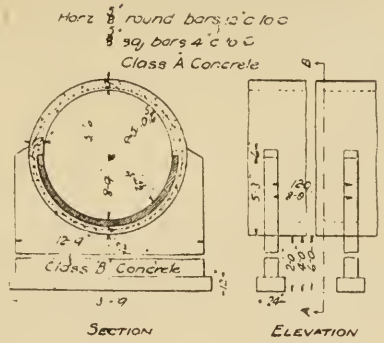
Reference note—

Completed work

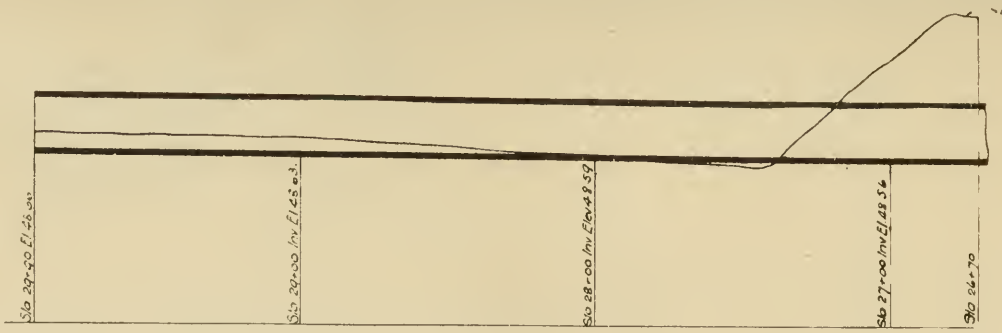
Contract awarded

Contract to be awarded. .....

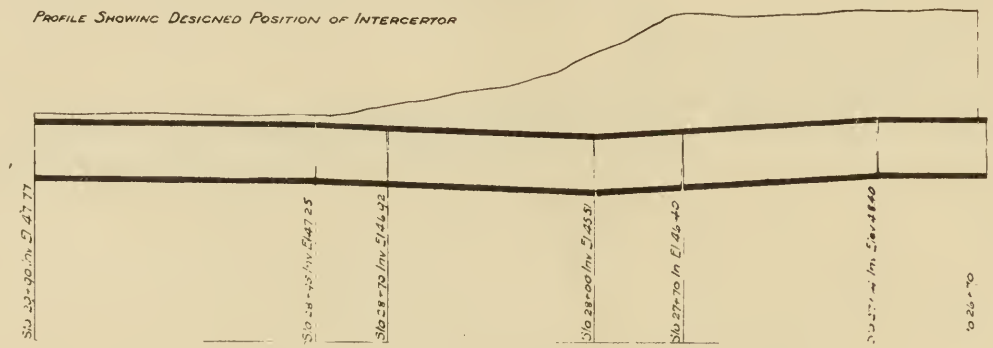
E 1054 A



ORICIONAL DESIGN OF SEWER



PROFILE SHOWING DESIGNED POSITION OF INTERCEPTOR



PROFILE SHOWING INTERCEPTOR AFTER SETTLEMENT HAD TAKEN PLACE

CITY OF TORONTO

MAIN DRAINAGE WORKS

HIGH LEVEL INTERCEPTOR

SECTION No 2

ORIGINAL AND REVISED DESIGN OF REINFORCED CONCRETE SECTION

SCALES

DETAILS 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 FT

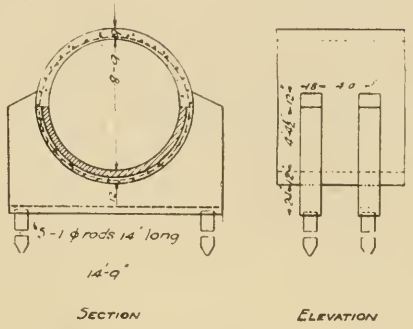
HORZ 0 1 2 3 4 5 6 7 8 9 10 FT

VERT 0 1 2 3 4 5 FT

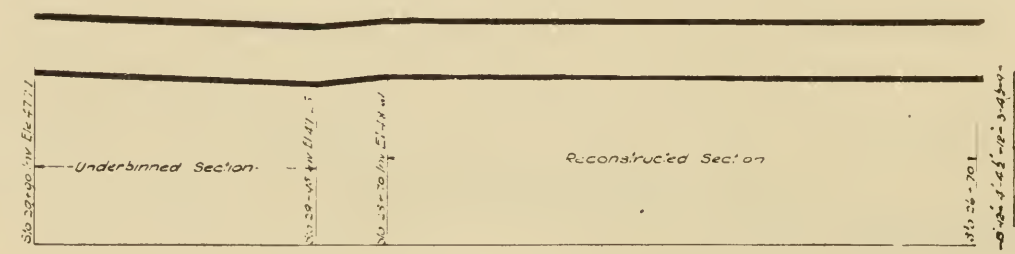
To Accompany Annual Report for 1911

Chas S Sproule

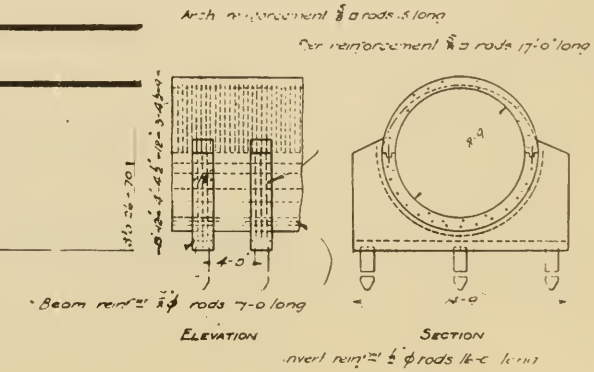
Assistant Engineer



DESIGN OF UNDERPINNED SECTION

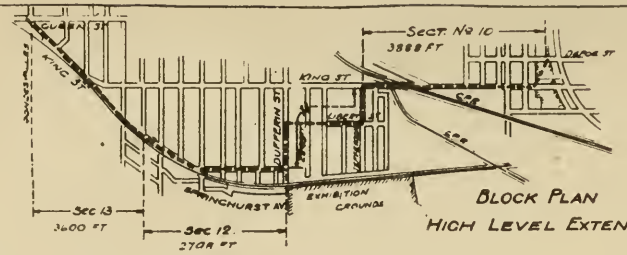


PROFILE SHOWING PRESENT POSITION OF INTERCEPTOR


Arch reinforcement ⅝ ϕ rods 15 long
Per reinforcement ⅝ ϕ rods 17'-0" long
4'-0"
Beam reinf'd ⅝ ϕ rods 7-0 long
Elevation
Section
Invert reinf'd ½ ϕ rods 14'-0" long

REVISED DESIGN OF SEWER

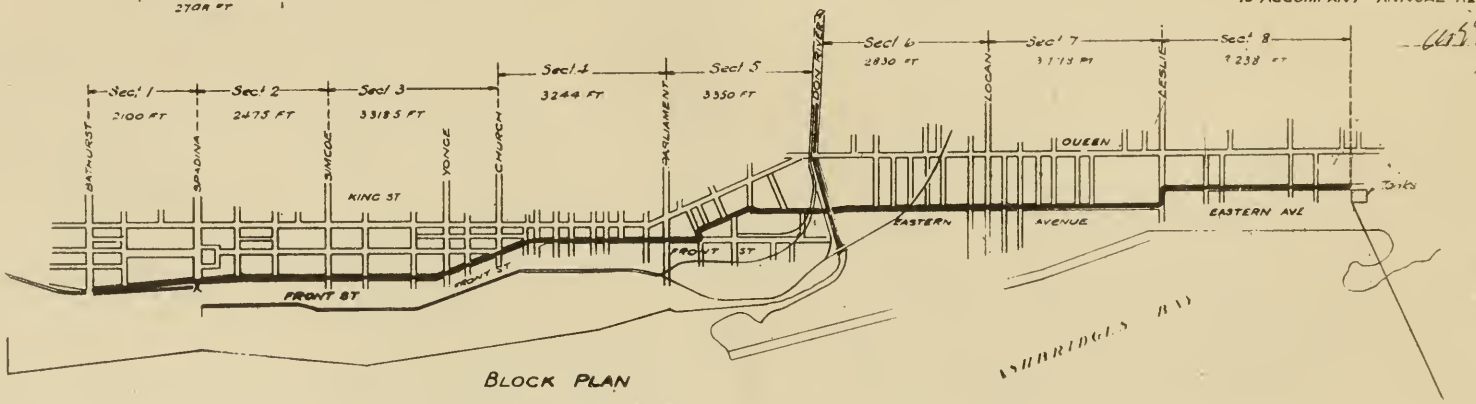
E1056.



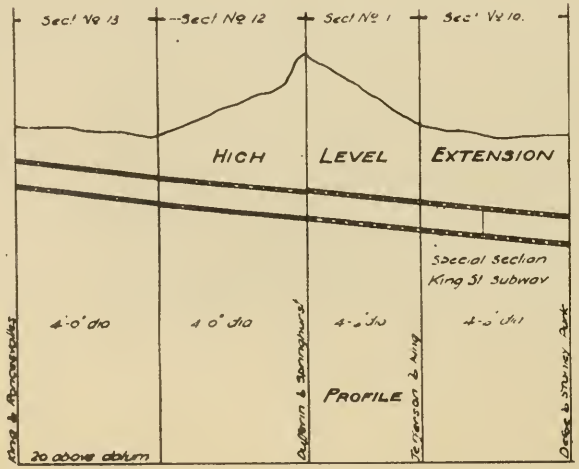
BLOCK PLAN
HIGH LEVEL EXTENSION

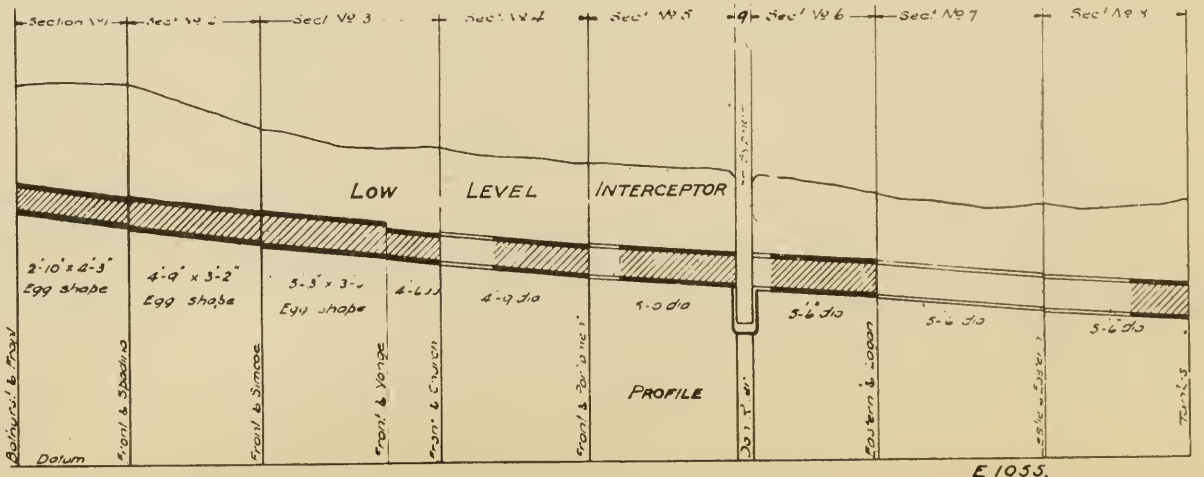
Reference No's
Completed work
Contract awarded
Contract to be awarded

CITY OF TORONTO
MAIN DRAINAGE WORKS
LOW LEVEL INTERCEPTOR
AND
HIGH LEVEL EXTENSION
PROGRESS PROFILE
TO ACCOMPANY ANNUAL REPORT FOR 1911



BLOCK PLAN
LOW LEVEL INTERCEPTOR





E 1055.

bend. In this way every bend on the curve makes a tight joint with its neighbor, and, with the use of a reinforced collar in addition, a fairly watertight job is anticipated.

It is proposed to increase the length of the High Level Extension, the design of which is at present underway, so that it will extend from the west end of the High Level Interceptor proper at Stanley Park westerly to the corner of Roncesvalles Avenue and King Street, where it will intercept the West Toronto trunk sewer. Provision in the By-law was made to build this sewer as far as the west end of Springhurst Avenue only, and that will be the present western extremity of the work. With the admission of West Toronto, however, and with the outlet of the West Toronto trunk sewer located at the intersection of King Street and Roncesvalles Avenue, it will be advisable to proceed with the present intention and produce the sewer to collect the flow at that point. It will not be possible, unfortunately, to finance this additional work with the funds now at our disposal, and I would suggest that application be made for a further grant to cover the cost of the same, which a rough estimate places at $50,000.

The greater part of the preliminary calculations for the section between Stanley Park and Dufferin Street has already been completed, and it is expected that the plans will be ready and tenders advertised for in time to get an early start in the spring.

LOW LEVEL INTERCEPTOR.

Very satisfactory progress has been made on the construction of the Low Level Interceptor. Apart from making the plans for Sections Nos. 1, 2 and 3, the whole sewer has been designed, contracts on all nine sections awarded, and 16,000 lineal feet, or two-thirds of the total length, constructed within the year. At the present rate of progress it is estimated that this sewer will be ready to carry sewage by the middle of next year.

The first four sections, running from Bathurst Street to Parliament Street, on Front Street, are constructed of brick, and range in size from a 2-ft 10-in. by 4-ft. 3-in. egg-shaped to a 4-ft. 9-in. diameter circular brick sewer. From this point easterly to the Disposal Works, with the exception of the Don syphon, the construction adopted is reinforced concrete pipe, ranging in size from 5-ft. diameter to 5-ft. 6-in. diameter circular. The syphon across the Don River—Section No. 9—is composed of two lines of 30-in. cast iron pipe which are connected to the interceptor on both sides of the river by two concrete chambers in which the flow through the pipes is regulated.

Of the brick sections, three were awarded to the Godson Contracting Co., and the fourth, awarded first to the City Engineer, was taken over by Messrs. Donnelly & Graham. The work was carried on in tunnel on account of its central location, and the material encountered was blue clay of much the same quality as that found on the line of the High Level Interceptor, although in some places it was encumbered with fairly large boulders. In one place, between Simcoe and Bathurst Streets, shale and rock outcropped on the invert, reaching a maximum depth of two feet and extending over a length of 500 feet. This reduced the daily progress in each heading from 8 to 4½ lineal feet, and seriously retarded the progress of the section, which had, during one week, averaged over 50 lineal feet a day.

The 5-ft. diameter section and one of the three 5-ft. 6-in. diameter sections were obtained by Messrs. Lehmann, Nicholson & Jerou, and the remaining two 5-ft. 6-in. diameter sections by the J. H. McKnight Construction Co. The former contractor employed a Potter machine on each section. These did not prove very satisfactory, in that they necessitated twice handling the surplus material removed from the trench, were unwieldy on the curves and made pipe handling difficult. A progress of 150 lineal feet a week was the maximum reached by either of these machines. The two clam-shell derricks used by the J. H. McKnight Construction Co., however, proved more suited to the work. One move of the machine of 36 feet representing 200 cubic yards, could be excavated in one day. The pipe-laying, which was done by the same machine, handicapped the work, however, and a progress of 188 lineal feet per week was the maximum obtained.

The contract for the construction of the Don syphon was awarded to Messrs. Miller, Cumming & Robertson. The method proposed by them is to construct the two chambers in the dry, setting the exit and entry pipes in each case, and to connect these across the bed of the river in the wet. Operations will be commenced on this work in a few weeks.

Some important changes have been made in the interception of certain sewers in the west end of the City, which have resulted in a considerable saving in the cost of construction, and an annual saving in the cost of pumping, by reducing the amount of sewage entering the Low Level Interceptor.

The only sewage reaching the Garrison Creek sewer below the High Level Interceptor is that from King Street on the west, Niagara Street between Defoe and Wellington Streets, Walnut Street and Wellington

Low Level Interceptor: Making 66-inch Reinforced Concrete Pipe.

Street between Walnut and Tecumseth Streets. The flow of sanitary sewage coming from the last three sewers is very small, and its presence in the Bay will create no nuisance until some means have been devised to handle it. By turning the smaller sewers and taking the King Street sewer into the High Level Extension, it is no longer necessary for the Low Level Interceptor to intercept the Garrison Creek sewer, and it can therefore end at the corner of Bathurst and Front Streets. This plan has been adopted and has resulted in a reduction in the flow entering the Low Level Interceptor of 500,000 gallons per day, and saving the construction of 2,450 lineal feet of sewer, the contract price of which was $13.10 per foot. A further reduction in the amount of sewage reaching the Low Level Interceptor has been accomplished by, where possible, moving the points of interception of the existing sewers along the line of the High Level Interceptor as far south as the difference in elevation between the existing sewers and the interceptor will permit. In this way it has been found feasible, in the case of Bathurst Street, Spadina Avenue and Peter Street, to move the point of interception from Adelaide Street south to King Street. The total reduction in the amount of sewage reaching the low level sewer due to these two changes amounts to 1,400,000 gallons per day.

THE SEWAGE DISPOSAL WORKS.

The same expediency exhibited in the construction of the trunk sewers during the year has been evidenced in the construction of, and the ultimate completion of, the Sedimentation Tanks. Of the total 24 units, 16 have been completed this year, the cast iron and timber penstocks are in place, and the whole has been back-filled and graded. The storm overflow from the tanks, for which plans were made, tenders received and the contract awarded during the year, has been constructed. This consists of a line of 5-foot concrete pipe (of the same design as those laid for the outfall sewer) laid on pile bents and extending south from the south-west corner of the tanks for a distance of 318 feet to Ashbridge's Bay.

Work in laying the outfall sewer was also carried on to completion; 2,014 lineal feet out of a total of 5,582 lineal feet being laid this year. An expansion joint has been ordered and manufactured for insertion in the steel portion of the outfall sewer where it emerges from cover, to the south of Woodbine Beach. The placing of the same had to be postponed till next year, however, owing to the delay attending its manufacture.

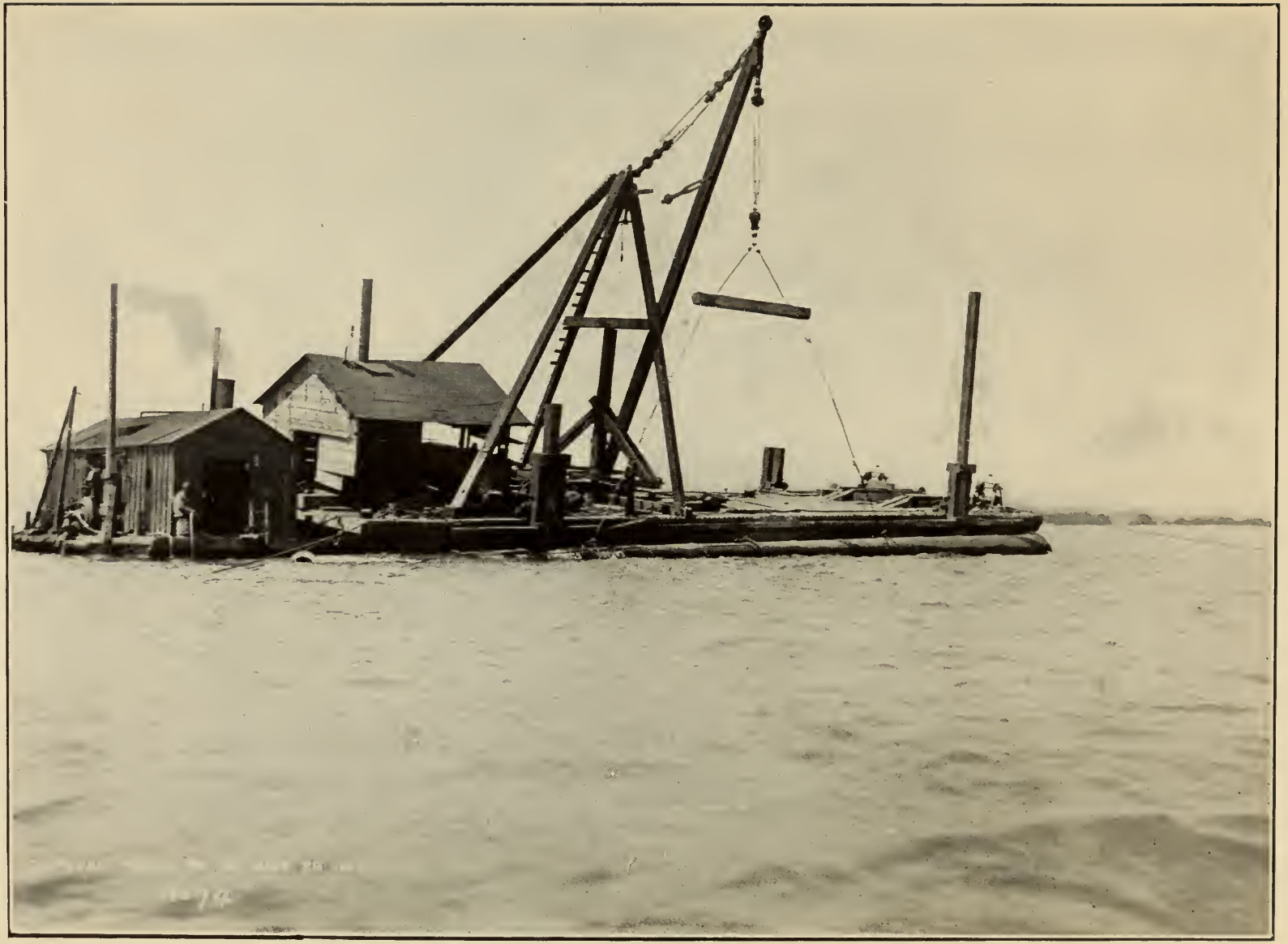
The substructure of the Pumping Station, with the exception of the sludge well, was commenced and completed this year. This work was carried on by the Department and was completed in time to allow the contractors for the superstructure to get well under way before the cold weather set in. This latter work is being carried on under the supervision of the City Architect, and the brick work is already practically complete.

The four High Level Venturi Meters connecting the Pumping Station with the Tanks have been constructed this year. They consist of concrete barrels 38 feet long, 56 inches diameter at the entry and 28 inches in diameter at the throat, substituted at the above two points by iron castings which were manufactured by the Builders' Iron Foundry. Plans were made and manufacture all but completed of the screening and elevating machinery also. It is expected that this apparatus will be in hand early in the next year, when its erection will be carried on. The contract for the supply of cranes, made in 1910, has been revised, and the cranes have been manufactured and delivered. The contract for pumps and electrical equipment suffered some delay owing to the fact that motors called for were unsuited to the current provided by the Hydro-Electric System, which is to supply the power for their operation, and tenders were accordingly cancelled. The manufacture of the pumps has, however, been proceeded with, and will be complete well on time. The revised specification for the motors is under way, and it is hoped tenders will be received early in the new year.

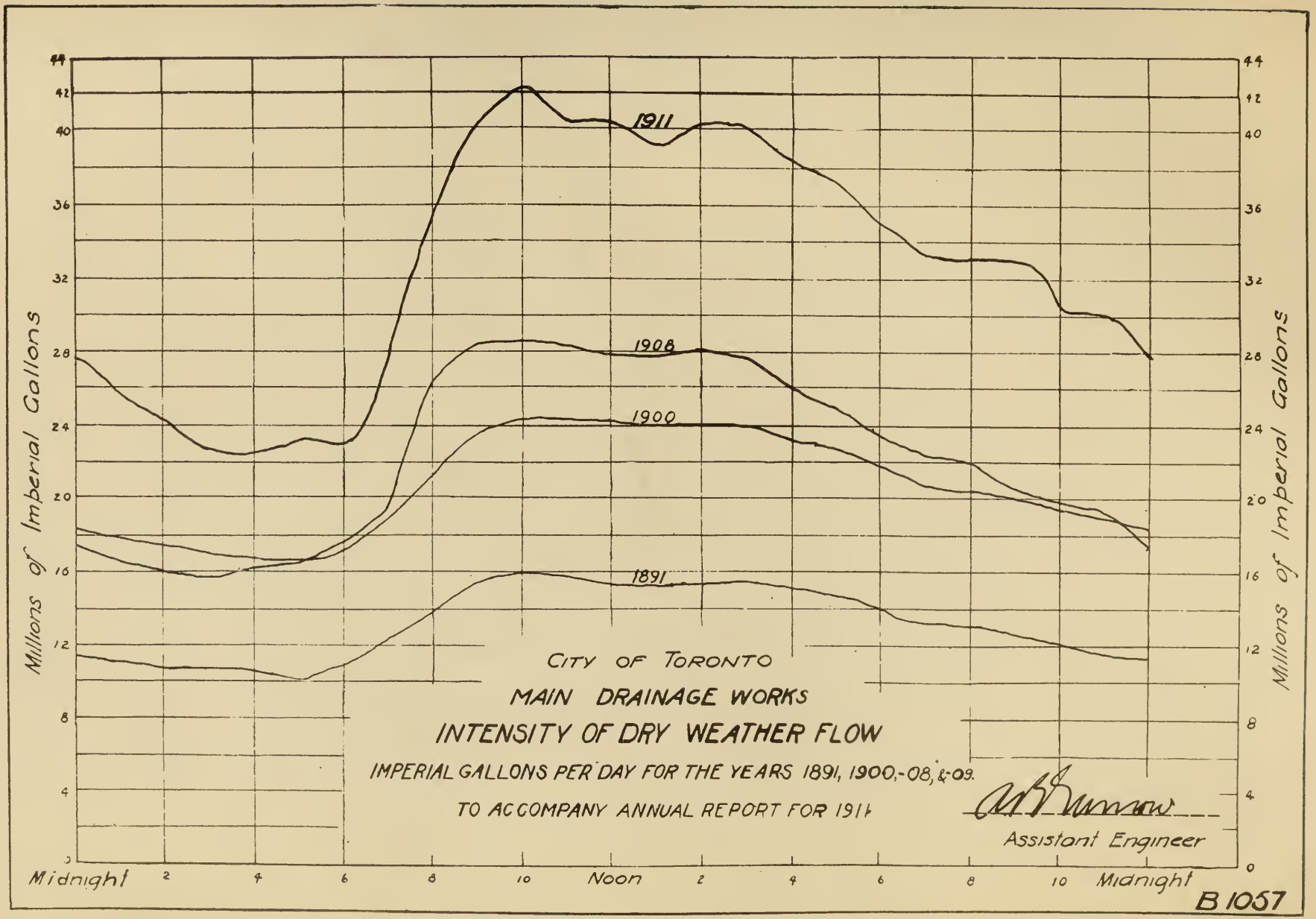
Provision for disposing of the sludge has been under consideration, and the method advised in the preliminary report of employing it with the addition of refuse for filling the low-lying ground in the vicinity of the work, partially adopted. It is proposed to sheet pile the south, and portions of the east and west boundaries of the Sewage Disposal Works site, which extend some 300 feet into Ashbridge's Bay, thus providing sufficient space for at least two years' sludge.

STORM OVERFLOW SEWERS.

Work on a system of storm overflow sewers was authorized, under By-law No. 5628, which was passed early in the year, providing for an expenditure of $800,000. The work was put in the hands of this Department, and the preliminary estimates and surveys were commenced forthwith. Much time was spent in collecting data regarding the locality of floodings throughout the City, the intensity and duration of storms, and other information necessary for planning an efficient system of relief sewers. By September the 6th (on which date the work was



Outfall Sewer: Lowering 100 feet of 5-foot Steel Pipe.


1911
1908
1900
1891
Millions of Imperial Gallons
Millions of Imperial Gallons
44
42
40
36
32
28
24
20
16
12
8
4
0
Midnight
2
4
6
8
10
Noon
2
4
6
8
10
Midnight
CITY OF TORONTO
MAIN DRAINAGE WORKS
INTENSITY OF DRY WEATHER FLOW
IMPERIAL GALLONS PER DAY FOR THE YEARS 1891, 1900,-08, &-09.
TO ACCOMPANY ANNUAL REPORT FOR 1911
Assistant Engineer
B 1057

handed over to the Sewer Department), considerable progress had been made, including the construction of 100 lineal feet of Wilton Section No. 1, from the Don to Yonge Street, the completion of the preliminary work on Wilton Section No. 2, and a portion of the preliminary work on the Sorauren, Manchester, and St. Clair relief sewers.

GAUGING THE SEWERS.

Almost the first move in the design of the Main Drainage System was the gauging of the flow in the existing sewers, which was done in the fall of 1908. In order to check the increase in the flow during the past three years, and to get an idea of what might be expected when the tanks were thrown into operation, it was deemed advisable to undertake a second gauging, and this was accordingly commenced in October of this year. The results are, of course, only approximate, due partly to the more or less rough construction of the apparatus employed, and also to the fact that the formula used in the calculation is an approximation between those for flow over weirs with and without velocities of approach. But as a method of comparison these common unknown quantities cancel each other, and we have a fairly correct idea of the increase in flow corresponding to the increase in population.

The population has been placed at 400,000, which is an average between the Dominion and assessment censuses taken in the summer, and the Police census taken in the winter, the latter of which, I am inclined to believe, more nearly represents the number of persons in the City at the time the gauging was made. Reference to the accompanying curve sheet shows an increase in the average flow of 1911 over that of 1908 of 8,000,000 gallons per day, for an increase in population over the same period of 85,000. Although this is at the high rate of 94 gallons per capita per day, the average flow for the year per capita per day is at the rate of 76 gallons, which approaches very nearly the results obtained in previous years. It will be interesting to note how closely these figures, which are probably correct to within 10 per cent., are borne out by the Venturi Meters, through which the sewage will pass at the Pumping Station.

The tables affixed hereafter give in tabulated form the progress made to date, and during the year, together with the value of the work performed.

Respectfully submitted.

A. B. GARROW,
Assistant Engineer, Main Drainage Works.

TABLE No. 1.

CONTRACTS AWARDED DURING 1911.

Division of Work.	Title.	Description.	Amount.
			$ c.
Low Level Interceptor	Sec. No. 1	2,116 lin. ft. of 2 ft. 10 in. x 4 ft. 3 in. Egg Shape Brick Sewer	27,719 60
" "	Sec. No. 2	2,470 lin. ft. of 3 ft. 2 in. x 4 ft. 9 in. Egg Shape Brick Sewer	32,455 80
" "	Sec. No. 3	3,316 lin. ft. of Brick Sewer as follows: 1,021 lin. ft. 4 ft. 6 in. Circular, 2,295 lin. ft. 3 ft. 6 in. x 5 ft. 3 in. Egg Shape	60,691 95
" "	Sec. No. 4	3,244 lin. ft. of 4 ft. 9 in. Circular Brick Sewer	55,894 12
" "	Sec. No. 5	Laying 3,350 lin. ft. of Concrete Pipe	33,332 50
" "	Sec. No. 6	Laying 2,830 lin. ft. of Concrete Pipe	28,300 00
" "	Sec. No 7	Laying 3,778 lin. ft. of Concrete Pipe	34,757 60
" "	Sec. No. 8	Laying 3,238 lin. ft. of Concrete Pipe	32,865 70
" "	Sec. No. 9	Laying pipe and constructing 2 Chambers, approximate length over all 164 lin. ft.	14,800 00
" "	Contract 42	Supplying 281.65 lin. ft. of 30 in. Cast-iron Pipe and Specials for Don Syphon	2,473 10
" "	Contract 29	Supplying 3,296 lin. ft. of 60 in. Concrete Pipe	15,985 60
" "	Contract 30	Supplying 9,504 lin. ft. of 66 in. Concrete Pipe	48,850 56
" "		Supplying 17 Penstocks	399 29
High Level Interceptor	Contract 44	Supplying approx. 5,730 lin. ft. of 42 in. Reinforced Concrete Pressure Pipe	19,933 44
" "	Sec. No. 14	985 lin. ft. of Brick Sewer 3 ft. x 4 ft. 6 in., Egg Shape	12,007 15
Sewage Disposal Works	Contract 24	Laying Overflow from Tanks	3,825 90
" "		Supplying Screens	6,876 00
" "		Supplying Pumps	6,257 00
" "		Supplying Venturi Meters	5,540 00
" "		Supplying Cranes	825 00
" "		Erecting Pumping Station (City Architect's Department)	30,000 00
		Constructing Sub-structure (day labor)	40,645 75

TABLE No. 2.

PROGRESS TO DATE BY SECTIONS—DECEMBER 31ST, 1911.

Division of Work.	Lin. Ft. Completed.	Lin. Ft. of Contract.	Lin. Ft. yet to Complete.
High Level Interceptor, Sec. No. 1..	3,322	3,409	87
" " " 2..	2,993	2,993	..
" " " 3..	6,421	6,421	..
" " " 4..	4,211	4,211	..
" " " 5..	6,420	6,481	61
" " " 6..	1,340	1,340	..
" " " 7..	3,253	3,253	..
" " " 8..	1,279	1,279	..
" " " 9..	500	500	..
" " " 14..	....	985	985
" " " 15..	1,904	5,712	3,808
Low Level Interceptor, Sec. No. 1..	2,116	2,116	..
" " " 2..	2,475	2,475	..
" " " 3..	3,316	3,316	..
" " " 4..	1,233	3,244	2,011
" " " 5..	2,932	3,350	418
" " " 6..	2,243	2,830	587
" " " 7..	1,259	3,778	2,519
" " " 8..	2,156	3,238	1,082
" " " 9..	41	164	123
	49,414	61,095	11,681

NOTE.—The pipe manufactured under contracts Nos. 29, 30, 42 and 44 have been represented above by their equivalent in linear feet or Sections Nos. 5, 6, 7, 8 and 9 Low Level Interceptor, and Section No. 15, High Level Interceptor, for which they are intended, although the contract for the latter has not yet been awarded.

TABLE No. 3.

Monthly Progress—All Sections.

Month.		Lineal Feet.	Summation.
	1910	....	16,698
January,	1911	1,732	18,430
February,	"	1,506	19,936
March,	"	1,375	21,311
April,	"	1,590	22,901
May,	"	3,058	25,959
June,	"	2,057	28,016
July,	"	2,243	30,259
August,	"	4,032	24,291
September,	"	2,872	37,163
October,	"	2,537	39,700
November,	"	2,406	42,106
December,	"	1,615	43,721
		27,023	
Equivalent of concrete pipe manufactured in lineal feet of sewer complete		5,693	49,414
Lineal feet constructed during 1911		32,716	

TABLE No. 4.

Total Value of Work to Date, Including Extras.

Title.				
High Level Interceptor, Sec. No.			1	$112,566 71
"	"	"	2	111,549 77
"	"	"	3	150,299 30
"	"	"	4	93,213 33
"	"	"	5	133,295 80
"	"	"	6	31,537 84
"	"	"	7	77,295 63
"	"	"	8	27,507 17
"	"	"	9	55,579 67
Pipes for Don Syphon				17,768 40
Penstocks				1,104 04
Contract, 44-42-in. pressure pipe				14,612 52
Low Level Interceptor, Sec. No.			1	27,788 55
"	"	"	2	34,025 26
"	"	"	3	61,814 95
"	"	"	4	21,510 41

TABLE No. 4—*Continued.*

Title.	
Low Level Interceptor, Sec. No. 5	20,901 62
" " " 6	23,812 72
" " " 8	12,100 64
Contract No. 29—60-in. concrete pipe	15,985 60
Contract No. 30—66-in. concrete pipe	48,830 56
Penstocks	399 29
Pipes for Don Syphon	2,473 10
Sewage Disposal Works:	
Contract No. 1—60-in. steel pipe	41,630 40
" " 2—60-in. concrete pipe	19,905 08
" " 3—Laying outfall	64,582 87
" " 4—Constructing tanks	146,643 05
" " 5—Cast iron specials	597 15
" " 6—Channels	284 78
" " 7—Valves	5,065 36
" " 8—Special castings	11,129 73
" " 24—Laying overflow	3,863 54
Venturi meters	5,540 00
Cranes	1,493 00
Extras, 60-in. steel pipe	4,378 00
Pumping Station substructure	40;645 75
Pumping Station superstructure	16,500 00
Total value of work	$1,438,241 69

SUMMARY, INCLUDING OVERHEAD EXPENSES.

	To 1910.	For 1911.	To date.
Value of work	$624,313 48	$813,928 21	$1,438,241 69
Engineering, labor, land damages, material and sundries, etc.	337,886 91	72,419 83	410,306 74
Totals	$962,200 39	$886,348 04	$1,848,548 43

Department of Photography and Blue Printing

Mr. C. H. Rust, City Engineer:

DEAR SIR,—Herewith I submit a report of the work done by this Department for the year ending December 31st, 1911.

Photographic negatives, 5 x 7	761
" " 8 x 10	57
" " 11 x 14	4
Total	822
Photographic prints, up to 4 x 5	158
" " " 5 x 7	2,314
" " " 8 x 10	818
" " " 11 x 14	43
Total	3,333
Blue prints, etc.	109,545 square feet.

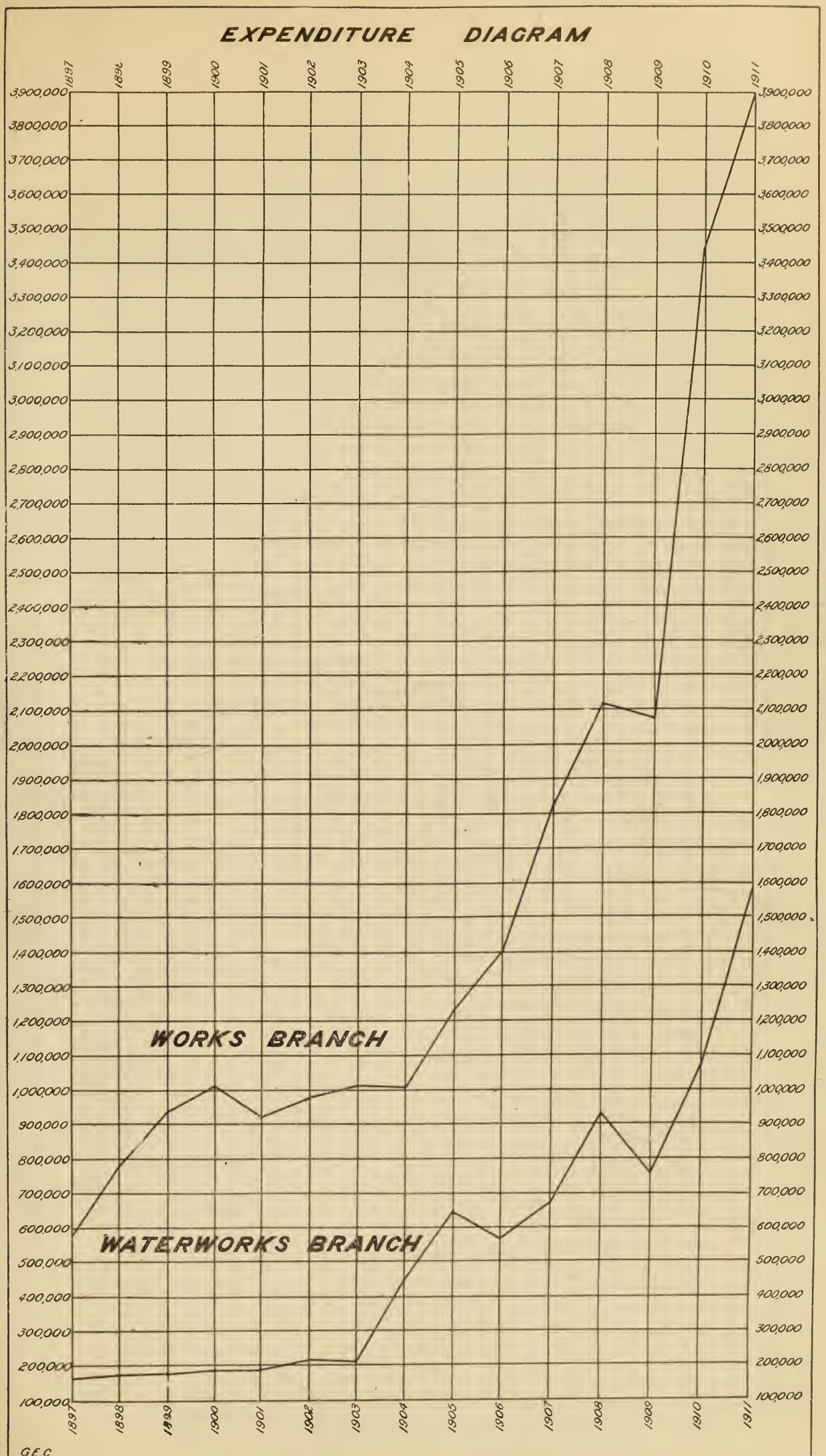
During the year, both of these branches of the Department were kept working, almost continually, to the capacity of the equipment; and at times, in the blue print branch, the pressure of work made it necessary to send out and have some of the blue prints made elsewhere.

Previous to 1911, Blue Printing and Photography work was paid for out of the Engineering and General Purpose Accounts, but since then the cost of Blue Prints and Photos have been all charged to the different departments or against appropriations for which they are made, so that at the present time this branch of the Department is practically self-sustaining.

An appropriation of $1,600 was granted by Council for remodelling and equipment of this Department, but up to the present time the room which was intended to be remodelled has been occupied by the Medical Health Department and, as a consequence, only a portion of this appropriation was spent on equipment that could be used in the present quarters.

Respectfully submitted,

A. S. GOSS,
Official Photographer.


EXPENDITURE DIAGRAM
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
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100,000
WORKS BRANCH
WATERWORKS BRANCH
G.E.C.

Accountant's Statement of Expenditure for 1911.

ACCOUNTS.	$ c.	$ c.	$ c.
GENERAL WORKS.			
Asphalt repairs	20,744 93		
Bridges, repairs and maintenance.	17,940 99		
Dock and wharf repairs	9,706 46		
Dredging slips	7,376 02		
Engineering and expenses $141,855 92			
Less transfers to sundry accounts and credits 117,132 56			
	24,723 36		
Express and cabmen's shelters	10 93		
General purposes, sewer repairs, etc. $23,500 12			
General purposes, water for flushing 10,000 00			
	33,500 12		
Level crossings	10,821 30		
Maintenance of lavatories	7,925 92		
New public lavatories	2,802 10		
New culverts	111 16		
Permanent crossings	1,972 51		
Roadways, repairs, etc.	119,933 79		
Sidewalks, repairs, etc.	15,161 32		
Private drains	85,363 73		
Sand pump No. 1	6,341 22		
Sand pump No. 2	5,451 04		
Sand pump No. 3, Don straightening and Ashbridge's Bay improvements	26,472 76		
Snow cleaning, crossings and channelling	21,974 54		
Snow cleaning, sidewalks	7,757 00		
Carried forward	426,091 20		

ACCOUNTS.	$ c.	$ c.	$ c.
Brought forward.....	426,091 20		
Stone, House of Industry.....	47 34		
Street tablets and house numbering	2,408 62		
Street railway matters	3,540 09		
Track repairs	184,278 00		
Tug "National," maintenance....	5,138 60		
Weed cutting	1,525 10		
Princess St. Yard, maintenance...	19 62		
	623,048 57		
Less amount paid Treasurer for private drains	87,486 50		
		535,562 07	
SPECIAL WORKS.			
Ashbridge's Bay reclamation, docks, etc.	21,305 57		
Exhibition Park, roadways, etc...	50,640 44		
Grade separation	60,326 13		
Groynes, Kew and Balmy Beach..	8,503 08		
Lansdowne Avenue subway.....	4,209 96		
New civic car lines	156,344 79		
New bridges, Park Drive.....	146 13		
Weston Road trestle	86 92		
New steam tug.....	4,490 94		
Princess St. Yard, piling.....	8,003 43		
Rusholme Road relief sewer.....	352 25		
Remodelling blue print room.....	26 25		
Queen Street high level bridge....	195,429 02		
Sea wall, Indian Road to Humber.	7,976 88		
Starr Avenue overflow sewer.....	59 19		
Storm overflow sewer	26,467 20		
Sea wall, easterly to New Fort....	834 93		
Sea wall, westerly to Exhibition..	3,312 76		
Subways, maintenance	28 58		
Tubes	6,174 36		
Trunk sewer	817,802 85		
Viaduct	6,875 00		
Weston Road bridge	24,761 18		
Carried forward.....	1,404,157 84	535,562 07	

ACCOUNTS.	$ c.	$ c.	$ c.
Brought forward.....	1,404,157 84	535,562 07	
Wilton Avenue bridge	32,260 39		
Gravel pits, Queen and Carlton Sts.	12,175 85		
		1,448,594 08	
OPPOSITE CITY PROPERTY.			
Concrete Walks.			
Sumach St., e.s., opposite Riverdale Park	195 78		
Hillsboro St., n.s., 358 ft. e. Davenport to 196 ft. east.....	155 72		
Concrete Curb.			
Grace St., w.s., 645 ft. s. of Bloor to 256 ft. south	91 77		
		443 27	
ISLAND COMMITTEE.			
Island water works	7,626 82		
Sidewalks	1,983 64		
Bridges, wharves, etc.	78 35		
Wooden walk on breakwater.....	2 340 72		
Turner's Bath bridge	219 82		
		12,249 35	
LOCAL IMPROVEMENT WORKS.			
Pavements	808,369 64		
Curbs	23,501 25		
Sewers	260.411 21		
Gradings, extensions, etc.	123,466 57		
Sidewalks	315,417 36		
		1,531,166 03	
Railway pavements and reconstruction of track allowance	.....	362,678 12	
			3,890,692 92

Respectfully submitted.

WM. McCARTNEY,
Accountant.

ACCOUNTS.	$ c.	$ c.	$ c.
WATER WORKS BRANCH.			
Maintenance.			
Maintenance and distribution....	65,356 56		
Main pumping station	61,578 91		
Main pumping station, coal.....	65,784 38		
Meter and machine shop.....	16,549 47		
Store house	2,721 32		
Hydrants and valves	11,019 73		
High level station	39,429 18		
Cartage	9,009 84		
Reservoir	8,139 37		
High pressure fire system, maintenance	5,587 79		
East Toronto water works	9,258 04		
West Toronto water works	12,839 71		
		307,274 30	
Construction.			
House services $127,568 44			
Less amounts paid Treasurer 20,800 05			
	106,768 39		
		106,768 39	
Renewals.			
House services	6,731 97		
Short lengths and extra fire hydrants	1,645 13		
		8,377 10	
Special Services.			
Filtration plant	311,671 49		
15-million gallon engine, No. 7...	56,867 98		
Repairs to conduit	174,684 37		
Clandeboye Avenue cut	19,954 00		
Extension of intake pipe (pipe)..	7,150 19		
East Toronto intake pipe.....	5,627 68		
Carried forward.....	575,955 71	422,419 79	

ACCOUNTS.	$ c.	$ c.	$ c.
Brought forward.....	575,955 71	422,419 79	
Captain Midford	100 00		
Electrical pumps—			
High level station	63,366 10		
Main pumping station.....	61,347 50		
Island pumping station.....	7,530 55		
Concreting reservoir	2,953 95		
6-million gallon engine No. 4, high level station	4,944 54		
Toronto Board of Water Experts..	1,098 58		
New meters	44,100 10		
Waste prevention	11,157 72		
Duplicate 6-ft. intake pipe.....	97,643 50		
Special Mains.			
Christie St., Davenport to 1,150 ft. south	1,191 53		
Macaulay Ave., 535 ft. w. Perth to 200 ft. w.	231 04		
Annette St., Runnymede to Jane..	5,993 75		
Cherry St. 12-in., Front to 2,000 ft. south	4,542 74		
Fire main, Exhibition Grounds...	445 59		
Parliament Buildings	2,761 89		
By-law No. 4982.			
16-in. and 12-in. main through Rosedale	98 95		
By law No. 5332.			
16-in., Rosedale Valley, Yonge to Broadview	30,515 67		
12-in., Gerrard St., old E. City limits to E. Toronto.....	10,625 01		
12-in., Danforth Ave., present E. City limits to Main	10,949 89		
12-in., Main St., Danforth to Gerrard St.	1,242 18		
Carried forward.....	938,796 49	422,419 79	

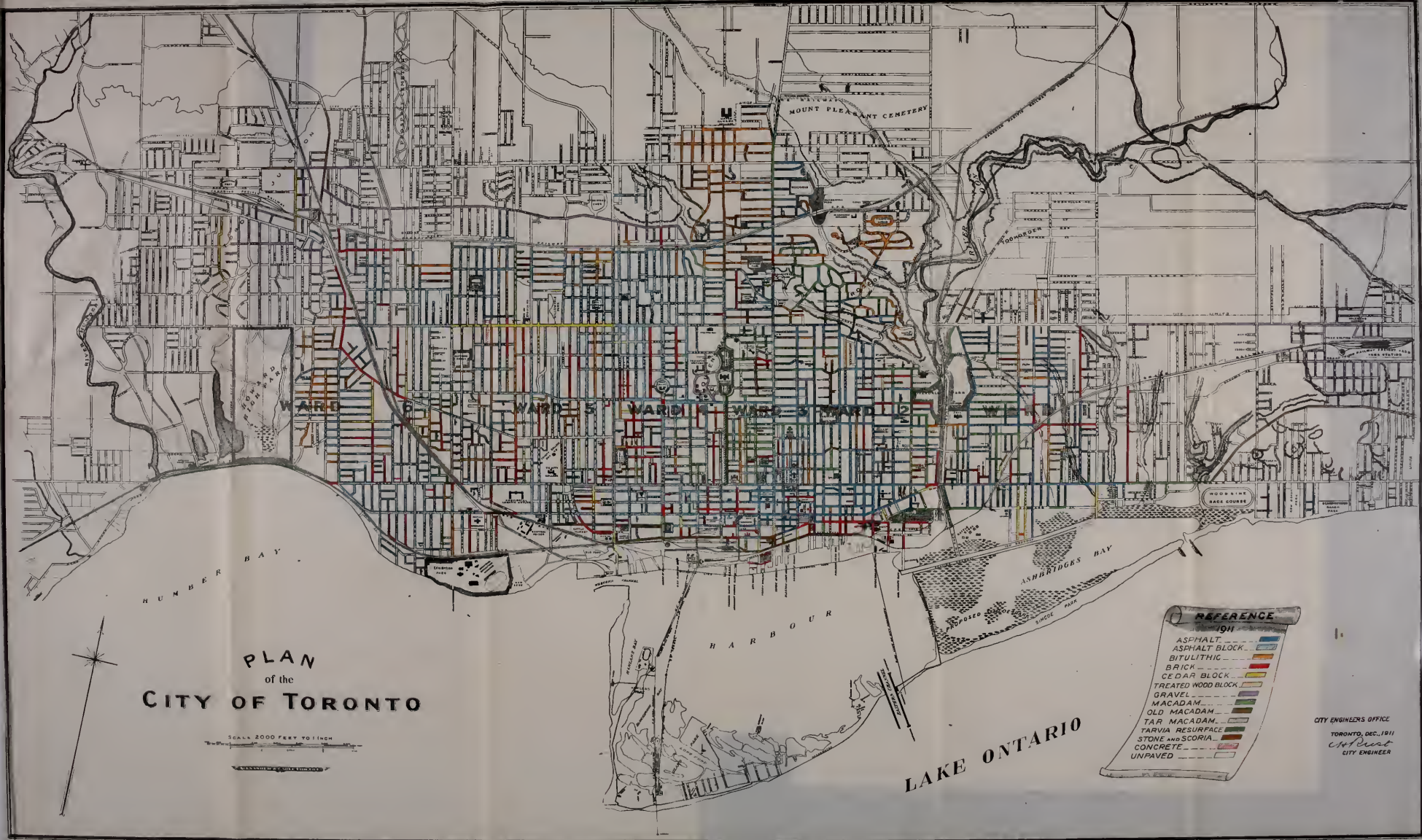
ACCOUNTS.	$ c.	$ c.	$ c.
Brought forward.....	938,796 49	422,419 79	
12-in., Carlaw Ave., Danforth to Gerrard St.	1,247 86		
12-in., Riverdale Ave., Broadview to Carlaw	769 05		
By law No. 5453.			
Renewing small mains, W. Toronto	10,920 48		
Renewing small mains, E. Toronto	2,616 87		
12-in. main, Kingston Rd., Queen to Beech Ave.	771 91		
12-in. main, St. Clair Ave., 200 ft. w. of Shaw to Runnymede....	1,500 93		
12-in. main, Ossington Ave., Davenport to St. Clair	174 71		
12-in. main, Queen St. E., Beech Ave. to E. City limits.....	212 19		
12-in. main, Dufferin St., Dupont to St. Clair	347 82		
12-in. main, Weston Rd., St. Clair Ave. north	2,676 39		
Valve chambers, West Toronto....	191 88		
Valve chambers, East Toronto.....	56 49		
20-in. main, Davenport and Weston Road	47,571 48		
12-in. main, Campbell Ave., Davenport to St. Clair.....	886 57		
12-in. main, Bathurst St., St. Clair Ave. south	2,565 15		
Short lengths	4,959 58		
		1,016,265 85	
Revenue mains	.....	115,621 13	
By-law No. 5776.			
12-in. main, North Rosedale and Wilton Ave., River to Broadview	908 57		
Carried forward.....	908 57	1,554,306 77	

ACCOUNTS.	$ c.	$ c.	$ c.
Brought forward.....	908 57	1,554,306 77	
36-in. main, Main P. Station, Front and Wellington St., Simcoe to College	15,896 43		
24-in. main, Sumach St., Queen to Wellesley	2,605 59		
		19,410 59	
			1,573,717 36

Number of contracts signed in 1912	677
Number of vouchers passed for payment (Works).....	4,301
Number of vouchers passed for payment (W. Works).....	2,494
Number of estimates, progress, completion and final, passed for payment (Works).....	1,936
Number of estimates, progress, completion and final, passed for payment (W. Works).....	732

Respectfully submitted.

WM. McCARTNEY,
Accountant.


MOUNT PLEASANT CEMETERY
WARD 6
WARD 5
WARD 4
WARD 3
WARD 2
WARD 1
HUMBER BAY
HARBOUR
ASHBRIDGES BAY
LAKE ONTARIO
PLAN
of the
CITY OF TORONTO
SCALE 2000 FEET TO 1 INCH
REFERENCE
1911
ASPHALT
ASPHALT BLOCK
BITULITHIC
BRICK
CEDAR BLOCK
TREATED WOOD BLOCK
GRAVEL
MACADAM
OLD MACADAM
TAR MACADAM
TARVIA RESURFACE
STONE AND SCORIA
CONCRETE
UNPAVED
CITY ENGINEERS OFFICE
TORONTO, DEC. 1911
CITY ENGINEER

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1911

Toronto. Dept. of Public Works
Report of the city engineer

[redacted]

Engineering

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